Youth Reports of Psychological Maltreatment, Social Anxiety, and Aggression: Evaluating Rejection Sensitivity as a Mediator

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ABSTRACT

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This study investigated two models evaluating rejection sensitivity as a mediator. One model examined rejection sensitivity as a mediator between caregiver psychological maltreatment and social anxiety, controlling for physical and sexual abuse. The second model tested rejection sensitivity as a mediator between psychological maltreatment and aggression, controlling for physical and sexual abuse. Of the different forms of child maltreatment, psychological maltreatment is proposed to be the strongest predictor of and have the most enduring impact on negative outcomes such as those evaluated in this study. To evaluate the impact of psychological maltreatment on these variables, a comprehensive measure of psychological maltreatment was used, and physical and sexual abuse were measured and controlled for. A total of 136 ninth grade boys attending an all-male Catholic high school in a low-income neighborhood were administered the Comprehensive Assessment of Psychological Maltreatment-Child Version (Brassard, Hart, Diaz, & Rivelis, 2011), Children's Rejection Sensitivity Questionnaire (Downey, Lebolt, Rincón, & Freitas, 1998), the Social Anxiety Scale for Adolescents (La Greca & Lopez, 1998), Youth Self Report Form-Aggression Scale (Achenbach, 1991), and the Parent-Child Conflict Tactics Scale (Straus, Hamby, Finkelhor, Moore, & Runyan, 1998). Analyses utilized the data of 117 subjects. Significant proportions of the sample reported high levels of psychological maltreatment (68% reported three or more behaviors at a significant level over the past year) and physical abuse (71% reported corporal punishment twice or more in the past year);

24% of the sample reported rejection sensitivity above the median of possible scores; 22% of the sample reported clinically significant levels of social anxiety; 14% of the sample reported borderline or clinically significant levels of aggression; 7% of all respondents reported either experiencing sexual abuse or did not respond to this item. Mediation hypotheses were tested using Hayes' (2013) conditional process analysis. The results supported both mediation models. In the model evaluating the relationship between psychological maltreatment and social anxiety through rejection sensitivity as a mediator, the indirect effect was determined to be significant based on a bias-corrected bootstrap confidence interval for the indirect effect (*ab* = .30) that was above zero (.004 to .730). The direct effect was not significant in this model, indicating that psychological maltreatment did not impact social anxiety independent of its effect on rejection sensitivity. The model explained 37.4% of the variance in social anxiety. The indirect effect for the model testing rejection sensitivity as a mediator between psychological maltreatment and aggression (*ab* = .04) was also found to be significant based on a bootstrap confidence interval above zero (.002 to .131). The direct effect in this model was significant, pointing to psychological maltreatment's influence on aggression independent of its effect on rejection sensitivity. The model explained 16.7% of the variance in aggression. Based on effect sizes, the sample size in this study was not adequate to establish sufficient (.80) power for mediation analyses. As this study is cross-sectional, the temporal sequence of the development of these constructs cannot be confirmed, though theory does suggest that psychological maltreatment leads to rejection sensitivity, social anxiety, and aggression and that rejection sensitivity precedes social anxiety and aggression. Implications for treatment and directions for future research were discussed.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

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CHAPTER 1: INTRODUCTION AND LITERATURE REVIEW

Psychological Maltreatment (PM) is a common form of child maltreatment that has deleterious effects on healthy emotional, social, and cognitive development. PM, or psychological abuse and neglect, consists of words or acts on the part of the caregiver which communicate that the child is unworthy of love, uncared for, or unsafe. However, because it does not leave observable physical remnants, PM is not as easily identified or as widely reported as other forms of abuse. A given parent may not be aware of the psychological abuse or neglect she inflicts on her child, yet this type of abuse attacks the core of an individual, with psychological scars remaining even when physical scars may fade. PM is an inseparable component of physical and sexual abuse. Behind these physical acts is an intrinsic psychological element, communicating to the child that he is in danger, unworthy of love, or unvalued. It is imperative that PM be investigated and targeted in interventions because of the significant effects this form of abuse has on the children who are victims of it. These outcomes, including social-emotional consequences ranging from internalizing to externalizing problems, are enduring and likely follow the child into adolescence and adulthood.

In order to intervene, the mechanism by which PM leads to negative outcomes needs to be explored. Several theories link childhood abuse and neglect with the development of negative patterns of thinking, negatively skewed internal working models, or maladaptive schemas. These theories have in common the impact of early experiences on how interpersonal information is processed, the development of expectations about how one will be treated, or how safe and secure one is in the context of relationships. It follows, then, that early experiences of PM negatively influence what individuals learn to expect from the people they develop close relationships with and the way they interpret interactions and circumstances.

This study will examine a cognitive and affective processing construct which is proposed to also be related to PM and negative social-emotional outcomes. Acts of PM may lead children to expect patterns of indifference, hostility, rejection, and degradation in their relationships with their caregivers, which may extend to their expectations of peers. Feldman and Downey (1994) conceptualized a cognitive pattern characterized by the expectation of social rejection as rejection sensitivity. This pattern of thinking includes defensively expecting, either anxiously or angrily, rejection from others. There is evidence that negative interactions with caregivers precede the development of rejection sensitivity and that rejection sensitivity negatively impacts interpersonal relations due to an underlying predisposition to anxiety or anger in the context of social interactions.

Existing research, including cross-sectional and longitudinal studies sampling both clinical and community populations, indicates that childhood abuse and neglect are predictors of social anxiety and aggression, and there is further evidence that this may occur through the building of cognitive patterns that serve as a template for expectations of negativity from others. The Comprehensive Assessment of Psychological Maltreatment-Child Version (CAPM-CV; Brassard, Hart, Diaz, & Rivelis, 2011) will be used in this study to examine rejection sensitivity as a mediator between PM and two outcomes: social anxiety and aggression. These relationships will be examined in a sample of low to middle income, mostly Hispanic adolescent males, and physical and sexual abuse will be controlled for. A related exploratory hypothesis will also be investigated, looking at whether presence of a history of physical abuse distinguishes between those that who report a high level of social anxiety and those who report aggression.

Thus far in the literature, rejection sensitivity has not been investigated as a mediator between these constructs, nor has a comprehensive measure of PM been used to evaluate the

relationship between PM and rejection sensitivity or the outcomes in this study. Furthermore, this study will fill gaps in the existing literature by measuring the unique impact of PM on these variables and controlling for physical and sexual abuse.

Psychological Maltreatment

Definition

PM is defined as a pattern of behavior on the part of a caregiver that conveys to a child that he or she is "worthless, flawed, unloved, unwanted, endangered, or only of value in meeting another's needs" (American Professional Society on the Abuse of Children (APSAC), 1995; Brassard, Hart, & Hardy, 1991, p. 255). This form of maltreatment has been demonstrated to have a detrimental impact on children's emotional, social, and cognitive development, leading to a diminished self-concept and/or a perception of others as uninterested, threatening or hostile. This paper proposes a model in which PM impacts interpersonal relations through the development of social anxiety or aggression due to an expectation of rejection by others.

PM includes psychological abuse and neglect. The APSAC Guidelines define six subtypes of PM, including spurning, exploiting/corrupting, terrorizing, denying emotional responsiveness, isolating, and mental health, medical, and educational neglect (see Appendix). Spurning is behavior that rejects, belittles or degrades the child. Exploiting and corrupting include acts that model, encourage, or permit the child to engage in inappropriate (e.g., self-destructive, criminal, deviant) or antisocial behaviors. Terrorizing includes caregiver behavior that threatens or is likely to hurt, kill abandon, or place the child, the child's loved ones, or the child's objects in recognizably dangerous situations. Denying emotional responsiveness, or ignoring, includes acts on the part of the caregiver that ignore the child's needs and attempts to interact and showing lack of emotion in interactions with the child. Isolating includes denying

the child opportunities to interact or communicate with peers or adults inside or outside of the home. Mental health, medical, and educational neglect consists of ignoring, refusing, or failing to provide needed treatment for mental health, medical, and educational problems or needs of the child (Hart & Brassard, 1991, 2001).

PM may occur in conjunction with or in isolation from other forms of abuse, such as sexual or physical abuse. Experts argue that PM is the core element of all other forms of abuse. This is because the psychological meaning behind acts of child abuse and neglect is embedded in the acts themselves; it appears that PM is the strongest predictor of the consequences and impact of child maltreatment; and PM is likely to bring about the longest-enduring and strongest negative outcomes in those who have suffered child abuse and neglect (Binggeli, Hart, & Brassard, 2001; Bottos & Nilsen, 2014; Briere & Runtz, 1988, 1990; Claussen & Crittenden, 1991; Crittenden, Claussen & Sugarman, 1994; Egeland & Erickson, 1987; Gross & Keller, 1992; McCord, 1983; Ney, Fung, & Wickett, 1994; Vissing, Straus, Gelles, & Harrop, 1991).

The term "psychological maltreatment" is used in the child abuse literature interchangeably with several terms, including emotional abuse and neglect, emotional maltreatment, psychological abuse and neglect, verbal abuse, and verbal aggression. Although the definitions are not consistent in the literature and often do not capture the comprehensive definition of PM, PM may be used in this paper to describe all abovementioned terms. In addition, this study specifically and solely assesses caregiver PM (i.e., PM by primary male and female caregivers). Although PM may be perpetrated by other family members (e.g., aunts, uncles, siblings) or individuals outside of the family system (e.g., peers, teachers), caregivers are assumed to have the most impact on the child's emotional development, both due to time spent together and the importance of parental/caregiver relationships in early social, emotional,

cognitive, and physical development (Beck, Rush, Shaw, & Emery, 1979; Bowlby, 1980; Mash & Barkley, 2006; Young & Lindermann, 1992).

Prevalence and Incidence

PM is highly prevalent, although largely underreported due to the psychological nature of this form of maltreatment in contrast with the physical nature of other forms of abuse. Results of the Fourth National Incidence Study of Child Abuse and Neglect (NIS-4) indicate that 2 out of every 1,000 children are psychologically abused based on a standard of evidence of harm (e.g., concrete physical or behavioral consequences of abuse or neglect, such as burns, bruises, depression or aggression), and 4.1 out of every 1,000 children are psychologically abused using a standard of evidence of endangerment (includes both children who are harmed and those who were endangered, but not yet harmed; e.g., physical abuse that did not leave a mark or psychological abuse that has not yet led to diagnosed depression) (Sedlak et al., 2010). According to this study, psychological neglect occurs in 2.6 and 15.9 out of every 1,000 children using standards of evidence of harm and endangerment, respectively (Sedlak et al., 2010). The data from this study are limited in that they were obtained from a representative sample of only maltreatment cases in the United States known to mandated reporters. As psychological abuse and neglect include acts of omission and commission that cause cognitive and emotional damage but do not leave observable physical marks (although there is growing evidence of internal damage to the brain and adrenocortical system; Schore, 2001), these incidences are almost definitely gross underestimates of the actual prevalence. Another study was conducted by The Family Research Laboratory at the University of New Hampshire using telephone surveys completed by a representative sample of American parents (Straus & Field, 2003). The survey asked parents whether they had engaged in various forms of psychological aggression, and

results demonstrate that 89 percent of these parents reported engaging in one or more forms of psychological aggression in the past 12 months, with 33 percent reporting severe psychological aggression (Straus & Field, 2003). This data speaks to the high prevalence of parental behaviors that have psychological ramifications. In a review of prevalence studies of adults' retrospective accounts of PM in their childhood, 33 percent reported experiencing a significant level of PM, while 10 to 15 percent recalled experiencing chronic PM to a severe degree (Binggeli, Hart, & Brassard, 2001).

Although it remains difficult to accurately estimate the prevalence of PM due to underreporting, the data points to a clear presence and significant occurrence of this form of abuse, not only in the United States, but also internationally. Zolotor et al. (2009) utilized a surveillance survey for children ages 11 to 19 that live with their parents, the ICAST-C. Experts representing 80 countries created this survey. The authors found that psychological victimization (both parental child abuse and older sibling abuse) was experienced by 64 percent of children surveyed in Colombia, 72 percent in India, 81 percent in Russia, and 48 percent in Iceland.

In addition to occurring across the world, PM has been shown to occur across socioeconomic statuses, although it is most common among those with low socioeconomic status. Based on the NIS-4 data, children from low-income families are psychologically abused five times more frequently and psychologically neglected four times more frequently than those in higher income families.

Relationship between Psychological Maltreatment and Emotional and Physical Health

There is significant evidence of the damaging effects of PM on several areas of adjustment in children and adolescents. Adverse effects of PM extend to intrapersonal thoughts, feelings and behaviors, emotional problems, problems in social functioning, learning, and

physical health (Hart, Binggeli, & Brassard, 1998). Brassard & Donovan (2006), Hart et al. (1998), and Hart et al. (2011) conducted thorough reviews of studies investigating the impact of PM in the above areas. Evidence that PM impacts intrapersonal thoughts, feelings, and behaviors includes studies demonstrating problems with depression, anxiety, impaired self-esteem, a negative outlook on life, and negative cognitive styles (Briere & Runtz, 1988, 1990; Caples & Barrera, 2006; Claussen & Crittenden, 1991; Crittenden et al., 1994; Egeland & Erickson, 1987; Finzi-Dottan & Karu, 2006; Gibb, Chelminski, & Zimmerman, 2007; Gross & Keller, 1992; Herrenkohl, Egolf, & Herrenkohl, 1997; Herrenkohl, Herrenkohl, Egolf, & Wu, 1991; Ney et al., 1994; Rohner & Rohner, 1980; Sachs-Ericsson, Verona, Joiner, & Preacher, 2006; Steinberg, Gibb, Alloy, & Abramson, 2003). Emotional problems include difficulties with impulse control, emotional instability, borderline symptoms, substance abuse, symptoms of eating disorders, and unresponsiveness (Braver, Bumberry, Green, & Rawson, 1992; Briere & Runtz, 1988; Crittenden et al., 1994; Egeland & Erickson, 1987; Engles & Moisan, 1994; McCord, 1983; Rohner & Rohner, 1980; Rorty, Yager, & Rossotto, 1994). Problems in social functioning found to be impacted by PM are impaired social competency, antisocial behavior, non-compliance, attachment insecurity or disorganization, self-isolation, withdrawal, social phobia, lack of empathy towards others, high dependence, aggression and violence, criminality, sexual maladjustment, and increased criminal behavior (Briere & Runtz, 1988, 1990; Brown, 1984; Claussen & Crittenden, 1991; Crittenden et al., 1994; Egeland & Erickson, 1987; Loeber & Strouthamer-Loeber, 1986; Main & George, 1985; Main & Goldwyn, 1984; Mullen, Martin, Anderson, Romans, & Herbison, 1996; Rorty et al., 1994; Vissing et al., 1991). Learning problems demonstrated to be predicted by PM include lack of enthusiasm, lower measured achievement and intelligence, decreased mental competence, problems with impulse control, low

creativity, difficulty learning and solving problems, and performing more poorly in school (Bottos & Nilsen, 2014; Claussen & Crittenden, 1991; Crittenden et al, 1994; Egeland & Erickson, 1987; Hart & Brassard, 1991; Rohner & Rohner, 1980; Sheintuch & Lewin, 1981; Starkey, 1980). Physical health problems associated with PM include hypertension, somatic complaints, respiratory ailments, failure to thrive, and delayed physical and behavioral development (Bowlby, 1951; Bugental, Martorell & Barraza, 2003; Carpenter et al., 2009; Choi, Jeong, Rohan, Polcari, & Teicher, 2009; Goldfarb, 1945; Jacobs, Spilken, & Noeman, 1972; Krugman & Krugman, 1984; McGinn, 1963; Puckering et al., 1995).

Major recent studies exploring the impact of PM in the areas of intrapersonal thoughts, feelings, and behaviors and social functioning will be explored in depth to provide a basis for hypothesizing relationships between PM, rejection sensitivity, social anxiety, and aggression.

Impact of Psychological Maltreatment on Intrapersonal Thoughts, Feelings, and Behaviors

PM creates in its victims an impaired sense of self, which manifests itself as low self-esteem, damaged self-concept, and internalizing problems such as depression, anxiety, and anger. Much evidence exists to support these relationships.

Mullen et al. (1996) conducted a study exploring associations between different forms of abuse, including emotional abuse, and adult problems in the areas of mental health, interpersonal relations, and sex. Emotional abuse in this study was defined according to a measure of parental bonding, the Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979). The PBI is a retrospective measure that assesses two dimensions of parenting style, care and overprotection. The care subscale measures behaviors ranging from care/involvement to indifference/rejection, while the overprotection subscale measures behaviors ranging from control/overprotection to encouragement of independence (Parker et al., 1979). In addition to care and overprotection

scores, parents being reported on are assigned to one of four quadrants: "affectionate constraint" (high care and high overprotection); "affectionless control" (low care and high overprotection); "optimal parenting" (high care and low overprotection); "neglectful parenting" (low care and low overprotection). For Mullen's study, those whose ratings of either parent fell one standard deviation or more below the sample mean on the "care" and above the mean on "overprotection" subscales were considered to be emotionally abused. Results of this study demonstrated that adults with a history of childhood emotional abuse were significantly more likely than the control group to have had an eating disorder, depressive illness, and to have been an inpatient in a psychiatric facility. Subjects with a history of emotional abuse were also significantly more likely to report having lower self-esteem.

Further evidence of the impact of PM on self-esteem was demonstrated by Gross & Keller (1992), Solomon & Serres (1999), and Higgins & McCabe (2000). Gross & Keller defined PM according to Hart, Germain, and Brassard (1987)'s seven behavior categories, including rejecting behaviors, degrading behaviors, isolating behaviors, terrorizing behaviors, corrupting behaviors, exploiting behaviors, and behaviors that deny emotional responsiveness. They utilized a modified version of the Child Abuse Questionnaire (Brown, 1986; Forsstrom-Cohen, 1985, as cited in Gross & Keller, 1992) to assess these behaviors. The original version of this questionnaire inquires only about physical abuse, and the authors added items to measure PM. They assessed parental PM behaviors such as belittling, showing disinterest, name-calling, and ignoring the child's motions toward physical affection. Gross and Keller's results revealed PM as a significant predictor not only of low self-esteem in a sample of 260 young adult college students, but also of depression and negative attributional style when physical abuse was

controlled. Physical abuse did not uniquely predict these variables when included in the model with PM.

Similarly, Solomon and Serres (1999) utilized a measure that assessed seven types of verbal aggression: rejecting, demeaning, ridiculing, cursing, terrorizing, criticizing, and insulting statements. The measure included two items that assessed whether the child had been subjected to physical punishment. The authors excluded from their analyses those children who reported being physically punished. They found that in a sample of 144 fifth grade children recruited from a public school, those who had experienced a significant level of parental verbal aggression demonstrated poorer self-perceptions (in the areas of social acceptance, scholastic competence, behavioral conduct, and global self-worth) than those who had experienced a low level of parental verbal aggression.

Higgins and McCabe (2000) defined psychological maltreatment according to the Comprehensive Child Maltreatment Scale (CCMS; Higgins & McCabe, 2001), which contains three psychological maltreatment items. Although the three neglect items on this scale fall under three forms of the accepted definition of psychological maltreatment (e.g., ignored your requests for attention; did not speak to you for an extended period of time), they did not utilize these items in their analyses. PM was not comprehensively assessed in this study. Subjects were asked to rate how frequently the following behaviors were directed towards them by caregivers or other adults: yelled at you; ridiculed, embarrassed, used sarcasm (made you feel guilty, silly, or ashamed); provoked, made you afraid, used cruelty (CCMS). Higgins and McCabes's results showed that both PM and sexual abuse uniquely predicted self-depreciation in a community sample of adults, while physical abuse, neglect, and witnessing family violence did not.

Finzi-Dottan & Karu (2006) evaluated the impact of emotional abuse and parenting style on adult psychopathology among a sample of Israeli college students. Emotional abuse was assessed with the Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998), a retrospective self-report questionnaire with an emotional abuse subscale. This subscale measures the degree to which the subject was verbally demeaned or humiliated (e.g., called names by family; felt hated by family). The CTQ also measures physical and sexual abuse, as well as physical and emotional neglect. Like Mullen et al. (1996) described above, the authors used the PBI to assess parenting style. Mother and father care and overprotection were analyzed separately. Their results revealed that recalled childhood emotional abuse and parenting style (maternal care, maternal overprotection, and paternal overprotection) had an effect on self-reported adult psychopathology, with immature defense mechanism organization (e.g., regression, acting out, primitive idealization) and self-esteem acting as mediators. However, physical abuse and sexual abuse were not controlled for.

Higgins and McCabe (2003) also found a relationship between childhood abuse and self-deprecation in a community sample of adults. Using the above described CCMS to retrospectively measure abuse, including sexual abuse, physical abuse, PM, neglect (both physical and psychological), and witnessing family violence, they found that all five forms of abuse predicted self-deprecation, with only neglect acting as a significant unique predictor. As mentioned previously, the neglect items on the CCMS fall under the definition of psychological maltreatment (denying emotional responsiveness, isolating, and medical neglect). The authors also found evidence linking PM to other internalizing problems. Higgins & McCabe (2003) conducted an additional study utilizing a community sample of primary caregivers of children up to age 12, which used the CCMS for Parents to evaluate the effects of the same five forms of

abuse on adjustment, all parent reported. They found that all forms of maltreatment, including PM, significantly predicted parent reports of children's internalizing behavior problems, with no unique significant predictors among the forms of abuse. Internalizing behavior problems were measured using the ASEBA Child Behavior Checklist (CBCL; Achenbach, 1991), which includes an Internalizing scale comprised of items measuring withdrawal, somatic complaints, and anxiety and depression symptoms. This study was limited, however, in that the reporters of maltreatment were parents themselves. Parents may be inclined to underreport or deny abusing their children, due to their guilt, denial, or fear of exposure. In addition, PM was measured using only three items (ridiculed or embarrassed, made afraid or used cruelty, yelled), which is unlikely to capture all of the various forms of PM or reliably measure whether PM is occurring in those parent-child relationships.

Studies have also found a particular link between PM and depression. Leeson & Nixon (2011) studied a sample of children who reported experiencing PM, measured with the Childhood Trauma Questionnaire, Short Form (CTQ-SF; Bernstein et al., 2003). This scale measures the same areas as the long form of the CTQ described above: sexual abuse, physical abuse, physical neglect, emotional abuse, and emotional neglect. The authors also added three items to assess witnessing family violence. A total PM score consisted of a combination of emotional abuse and neglect subscale scores. The maltreated sample was recruited from child protective and mental health services, as well as community advertising. This sample was compared with a control group, recruited from schools in locations matching the socioeconomic status of the maltreated children. They found that PM was significantly related to self-reported depression and low self-esteem, in addition to parent-reported internalizing problems, after other forms of abuse and neglect were controlled for.

Gibb, Chelminski, et al. (2007) found that among adult psychiatric outpatients who were assessed using the Structured Clinical Interview for DSM-IV Axis I Disorders-Patient edition, a diagnosis of major depressive disorder was specifically related to PM. PM in this study was also assessed using the CTQ. In another study, Gibb, Benas, Crosset, & Uhrlass (2007) found support for a meditational model wherein negative and positive automatic thoughts fully mediated the relationship between recalled emotional maltreatment in childhood and depressive symptom levels in a sample of undergraduates. Automatic thoughts consisted of negative and positive self-statements (e.g., "I'm worthless" or "I can accomplish anything"). Such self-statements are hypothesized by Beck's cognitive theory of depression to be developed subconsciously and are key components of depressive responses to negative life events (Gibb, Benas, et al., 2007). Gibb, Benas, and colleagues used the emotional maltreatment subscale of the Life Experiences Questionnaire (LEQ; Gibb et al., 2001) to assess PM, which included items measuring derogation, humiliation, rejection, extortion, and teasing.

Webb, Heisler, Call, Chickering, & Colburn (2007) conducted a study utilizing a sample of college students. PM was measured using the Psychological Maltreatment Inventory (PMI; Engels & Moisan, 1994), which assessed three areas of PM: emotional neglect (e.g., detachment, lack of affection); hostile rejection (e.g., name-calling, yelling); isolation (e.g., not letting the child go outside, encouraging withdrawal). The authors found that recalled PM was positively correlated with both depressive symptoms and shame.

Kim et al. (2003) evaluated parental behaviors of African-American parents and the occurrence of symptoms of depression in their children. The authors utilized a longitudinal design and community sample of 897 African-American children and their caregivers, assessing the children at mean ages of 10 and 12. They assessed parenting behaviors through both primary

caregiver and youth reports of harsh-inconsistent parenting, nurturant-involved parenting, and parental warmth and hostility. They found that compared to those children who did not have adjustment problems, depressed youth reported a higher level of harsh-inconsistent parenting and hostility. Furthermore, children whose symptomology increased over the two assessment periods of the study reported a significant decrease in warmth and nurturing parenting as well as a significant increase in parental hostility and harsh-inconsistent parenting. This study demonstrates the effects of parental behaviors of an emotional nature on internalizing problems in a sample of African-American children. However, although harshness, warmth, nurturance, and hostility tap into constructs related to PM, the construct of PM was not assessed per se as a reliable measure of PM was not utilized. This study measured three categories of parent behaviors. The first was harsh and inconsistent disciplinary practices, defined as the frequency with which parents yelled at, hit, spanked, or locked their child out of the house when the child misbehaved. Nurturant-involved parenting was defined as whether parents were aware of their child's school performance and whereabouts after school, as well as the extent to which they used open communication, reasoned, and engaged in cooperative problem-solving and decision-making with their child. Lastly, parental warmth and hostility was measured by the frequency with which parents expressed warmth, support, and affection, as well as hostility and negativity in the past 12 months.

Relationship between Psychological Maltreatment and Social Anxiety

Among the internalizing problems that have been linked to PM are symptoms or a diagnosis of social anxiety and social phobia. Several studies have provided evidence for such a link.

In the study outlined above, Gibb, Chelminski, et al. (2007) evaluated the relationship between specific forms of abuse and psychiatric diagnoses. The authors found that in addition to major depressive disorder, social phobia was more strongly related to childhood emotional abuse than physical or sexual abuse.

Shaffer, Yates, & Egeland (2009) conducted a prospective longitudinal study investigating emotional maltreatment observed over repeated home and research lab visits in early childhood (ages 3 months to 42 months). They utilized a subsample of a larger high-risk sample of children and their families who were followed in a longitudinal study (Minnesota Longitudinal Study of High Risk Parents and Children) from birth through age 17.5. Mothers were of low socioeconomic status, and the majority were Caucasian (82%) and African-American (12%). The authors of this study were interested in the relationship between emotional maltreatment, social withdrawal, and young adult adjustment in this community sample of 196 children. Shaffer et al. (2009) conducted assessments measuring social withdrawal and adjustment in the time period during which subjects ranged from 24 months to sixth grade. Social withdrawal emerged as a mediator in the relationship between childhood emotional abuse and adaptation in adolescence, measured as teacher-rated self-esteem and social competence in peer relations. One advantage of this study is that emotional maltreatment was measured by direct observation at various time points rather than via retrospective accounts. However, adjustment was measured by teacher reports, which only reflects adolescent adaptation in one setting based on the report of one adult who may or may not know the child well.

Simon et al. (2009) examined a sample of adults diagnosed with social anxiety disorder who were seeking treatment. They found that those who reported emotional abuse and neglect in

childhood reported greater severity of symptoms of social anxiety and poorer related functioning than those who did not report this form of maltreatment.

In a study examining a sample of adult patients with social anxiety disorder and panic disorder in South Africa and Sweden, Lochner et al. (2010) found that patients with social anxiety reported emotional abuse in childhood at a higher rate than panic disorder patients, and emotional abuse was also found to be a predictor in regression analyses of social anxiety.

Kuo, Goldin, Werner, Heimberg, & Gross (2011) conducted a study looking at the psychological functioning of adults with and without social anxiety disorder in relation to childhood trauma. Their results indicated that adults with social anxiety disorder reported more childhood emotional abuse and neglect than those without this diagnosis. Emotional maltreatment in childhood was also related to current levels of social anxiety in the subjects, as well as trait anxiety and self-esteem. Emotional neglect in childhood was linked with current levels of depression.

The link between child maltreatment, and more specifically PM, and social anxiety is evident. Additional studies examining the mechanism through which this relationship occurs are necessary to contribute to the literature in this area.

Relationship between Psychological Maltreatment and Aggression

Another potential consequence of PM is the development of anger and hostility. Feelings of anger may in turn lead to externalizing problems such as aggression. Several studies have investigated these relationships.

Vissing et al. (1991) utilized a nationally representative sample of over 3,000 parents of children under the age of 18 to investigate the prevalence of verbal aggression, which they defined as “a communication intended to cause psychological pain to another person, or a

communication perceived as having that intent." They also sought to investigate the effects of verbal aggression on children, including whether there was a link between parental verbal aggression and physical aggression on the part of the child. The authors found that the more children received verbal aggression from their parents, the more likely they were to engage in physical aggression, including physical fights with another child at home, with nonfamily children, with adults at home, and with nonfamily adults. This applied to all age groups, both genders, and all socioeconomic statuses. They also tested for an interaction effect, which indicated no significant verbal by physical aggression interaction. The relationship between verbal aggression by parents and physical aggression by children was not affected by the level of physical aggression used by parents.

Kolko, Kazdin, and Day (1996) conducted a study that investigated children's reports of family violence and parental verbal aggression, and the relationship between these reports and children's overall functioning and adjustment. Three hundred twenty three children ages 6 to 13 years who were part of a larger study on antisocial behavior and fire-setting were included in the study, including community cases and outpatient clinic cases. Both children with and without a history of fire-setting were recruited. Children and one of their parents were given interviews and asked to complete rating scales measuring child, parent, and family functioning at initial assessment and at a 2-year follow-up. Rating scales on children's functioning and adjustment were completed by the children and their parents at 2-year follow-up. Participants completed the Conflict Tactics Scale (CTS; Straus, 1979) to assess response patterns during family conflict, including violence (e.g., kicking, hitting, beating up, threatening with a weapon) and verbal aggression (e.g., insulting, swearing). Each of these factors was rated for five dyads: child to sibling, child to reporting parent, reporting parent to child, reporting parent to partner, partner to

reporting parent. Based on parent reports, verbal aggression from mother to child at initial assessment predicted children's arguing/fighting and hostility at 2-year follow-up above and beyond verbal aggression or physical aggression in other dyads. The same was true for externalizing problems on the CBCL, which includes delinquent and aggressive behaviors. However, these relationships were not significant based on children's reports. Mother to child physical aggression was also assessed in this study, and this construct predicted children's self-reporting of delinquency when controlling for other forms of violence and verbal aggression.

In a 1997 study, Loos and Alexander investigated the long-term effects of parental maltreatment, including verbal abuse and emotional neglect. Undergraduate students completed retrospective measures of maltreatment and three measures of current functioning, one of which assessed anger and aggression. They used the CTS to assess verbal abuse and physical abuse. Emotional neglect was assessed using the caring scale of the PBI. Six dimensions of anger and aggression were measured through the Brief Anger and Aggression Questionnaire (BAAQ; Maiuro, Vitaliano, & Cahn, 1987): assault, indirect hostility, negativism, irritability, hostility, and resentment. The authors found that retrospective reports of parental physical abuse predicted reports of current anger and aggression above and beyond parental verbal aggression, emotional neglect, sex of the children, and socioeconomic status of the family. This finding supports the exploratory hypothesis in this study regarding physical abuse differentiating between those psychologically maltreated children who become socially anxious, and those who become aggressive. The authors also used the Harsh Parental Discipline subscale of the CTS, which measures acts of physical punishment not as severe as those on the physical abuse subscale, such as hitting with belts, to examine an exploratory hypothesis examining the relationship between

physical punishment and levels of anger and aggression. Similar to the results for physical abuse, harsh parental discipline was found to predict anger and aggression.

As described above, Shaffer et al. (2009) utilized a prospective, longitudinal design to investigate the relationship between observed emotional abuse and neglect from 3 months of age to 42 months of age and negative outcomes in middle childhood and early adolescence, including examining social withdrawal and aggression as mediators. All analyses controlled for physical and sexual abuse. They found that early childhood emotional abuse and neglect were associated with higher levels of aggression in middle childhood. However, although social withdrawal was found to mediate the relationship between emotional abuse and adolescent competence (self-esteem and peer competence), aggression was not. Neither of the mediation models for emotional neglect were supported. The authors interpreted the stronger relationship with social withdrawal demonstrated by this study as perhaps indicating that emotional abuse moves children to more strongly turn *away* from relationships with others (social withdrawal) than *against* relationships with others (aggression). Turning away from relationships was described as a coping or protective mechanism to prevent further abuse.

Spillane-Grieco (2000) studied a group of juvenile offenders who lived in juvenile detention centers or foster homes and compared them with a control group of randomly selected teenagers the same age. Each group had 25 subjects. She hypothesized that the offenders would report experiencing a higher level of violence between family members as reported by the CTS, including physical aggression, verbal aggression, anger, and hostility. Compared to the control group, the offender group was found to have experienced a significantly higher level of verbal aggression from their mothers compared to the control group. The offender group also rated themselves significantly higher for demonstrating physical aggression and hostility. Furthermore,

this group reported being significantly more physically aggressive toward their mothers and fathers, and they reported that their mothers were significantly more physically aggressive toward them compared to the control group. Interactions between physical and verbal aggression were not examined. Qualitatively, the teenagers reported being "put down" by their parents repeatedly, told they would not "amount to anything," and were often compared to relatives who did not succeed. Moreover, they did not recall either of their parents speaking about them positively.

In the studies described above, Leeson and Nixon (2011) and Kim et al. (2003) explored the relationship between PM and externalizing behaviors or conduct problems. Leeson and Nixon measured externalizing behaviors using the corresponding subscale of the CBCL, which assesses delinquent and aggressive behaviors. They found that above and beyond other maltreatment types, including physical abuse, PM predicted externalizing behaviors in a sample of maltreated children ages 6 to 17. Kim et al. examined symptoms of conduct disorder (including behaviors such as lying, cruelty to animals, shoplifting, physical assault, and fire-setting), measured by the Diagnostic Interview Schedule for Children, Version IV (DISC-IV; Shaffer, Fisher, Lucas, Dulcan, Schwab-Stone, 2000). Children with conduct problems reportedly received higher levels of harsh-inconsistent and hostile parenting behaviors, along with lower levels of warmth and nurturant-involved parenting compared to depressed children and children without adjustment problems across both time points of the study. However, physical abuse was not controlled for in this study.

Like Shaffer et al. (2009), Egeland, Yates, Appleyard, and van Dulman (2002) utilized the sample from the Minnesota Longitudinal Study of High Risk Parents and Children. Children in this sample were identified as physically abused or emotionally neglected. Physical abuse was

determined by the presence of a substantiated child protection case, and emotional neglect was established during early childhood (0-54 months) through multiple home and laboratory observational assessments. Mothers who were emotionally neglectful appeared to be detached and unresponsive to the child's needs or when the child indicated a desire for comfort (Egeland & Erickson, 1987, as cited in Egeland et al., 2002). The authors were interested in the relationship between childhood maltreatment (physical abuse and emotional neglect) and antisocial behavior in adolescence. Antisocial behavior was measured in different ways at different ages. In middle childhood it was measured by teacher reports on the ASEBA Teacher's Report Form (ASEBA TRF; Achenbach, 1991) externalizing behaviors subscale, which reflects delinquent and aggressive behaviors. A composite of parent, teacher, and child reports on the Youth Self Report Form (YSR; Achenbach, 1991) delinquent and aggressive behavior subscales was used to measure antisocial behavior at age 16, and at age 17.5 a diagnosis of conduct disorder was used, based on a diagnostic interview, the Schedule of Affective Disorders and Schizophrenia for School-Aged Children (K-SADS; Puig-Antich & Chambers, 1978). They looked at emotion dysregulation and alienation from the primary caregiver as mediators in the relationship between maltreatment and antisocial behavior. In examining simple relationships, the results indicated that both physical abuse and emotional neglect were risk factors for antisocial behavior in adolescence; however when they tested the mediation model they found that physical abuse, not emotional neglect, had a significant effect on middle childhood externalizing behavior (which then had a significant effect on adolescent antisocial behavior) through alienation from the primary caregiver as a mediator. Emotional neglect did not make a unique contribution in predicting externalizing behaviors.

In a 2001 study, Manly, Kim, Rogosch, and Cicchetti examined different types and levels of severity of maltreatment in relation to adaptation in a group children ages 5.5 to 11.5 years. The children were all attending a one week summer day camp, which also functioned as a research program, allowing children to be observed in a natural setting. Presence of maltreatment was determined by a review of Child Protective and Preventive Services records on file. The narrative report was used to classify maltreatment according to four types: physical abuse, sexual abuse, emotional maltreatment, and physical neglect. Classification was based on Barnett, Manly, and Cicchetti (1993)'s MCS, a nosological classification system for child maltreatment (as cited in Manly et al., 2001). The developmental period(s) during which maltreatment occurred was noted. Emotional maltreatment was defined as "persistent or extreme thwarting of children's emotional needs" (Manly et al., 2001, p. 765). For example, emotional maltreatment included acts such as threatening injury to the child, abandonment by caregivers, and suicide attempts by caregivers in the presence of the child. Non-maltreated children were selected from the camp based on matching demographic variables. Camp counselors completed ratings of externalizing behaviors on the teacher report form of the CBCL (delinquent and aggressive behavior) and also completed a behavior checklist that assessed peer interactions, including aggressive behavior. In addition, children were interviewed and asked to name another child who best fit certain behavioral descriptions (such as "a fighter" or "a disruptive child") (Manly et al., 2001, p. 768). Results indicated that severity of emotional maltreatment and physical neglect in infancy-toddlerhood, physical abuse at preschool age, and physical neglect during middle childhood were related to counselor-rated externalizing behaviors, when controlling for other forms of abuse. Severity scores of emotional maltreatment during infancy-toddlerhood and emotional maltreatment and physical abuse during preschool age significantly predicted

counselor-rated aggression. Based on peer ratings, severity of physical neglect during infancy-toddlerhood and emotional maltreatment at preschool age were related to fight-starting. Overall, the authors found that emotional maltreatment in early years (infant-toddlerhood and preschool) was detrimental to adaptive functioning, especially in the areas of aggression and externalizing behaviors. The results also highlighted the impact of physical abuse on aggression, especially when experienced during the preschool years.

Theory behind the Impact of Psychological Maltreatment on Cognition

There has been significant evidentiary support for the negative impact of PM on intrapersonal thoughts, feelings, and behaviors. Such evidence has extended into research looking at the mechanisms by which PM predicts internalizing problems. One such mechanism involves the impact that PM has on cognition, including styles and patterns of thinking, schemas that develop, and automatic thoughts.

Attachment theory. Attachment theory, which was pioneered by Bowlby and Ainsworth, offers a mechanism by which children create a representational model of the self, significant others or attachment figures, and their interrelationships, based on relationships and experiences with caregivers. As early as infancy, children form a mental representation of their attachment figures and develop a model through which they form expectations about what to anticipate from others. Bowlby referred to this as an internal working model (Bowlby, 1980). A secure attachment style is developed when caregivers respond consistently and lovingly to the needs of the child, and in turn a working model is internalized wherein others are perceived as loving and dependable. On the other hand, inconsistent, indifferent, and harsh responses on the part of the caregiver yield insecure attachment styles, wherein a child internalizes a perception of others as unreliable and harsh or cold, and consequently they may view themselves as worthless,

incompetent, and unworthy of attention or affection (Mash & Barkley, 2006). Psychological maltreatment impacts the relationship between children and caregivers in a way that contributes to a negative internal working model, and therefore an insecure attachment style (Egeland & Erickson, 1987; Lyons-Ruth, Connell, & Zoll, 1989).

Beck's cognitive theory of psychopathology. Beck proposed a cognitive theory describing a mechanism by which psychopathology is developed, maintained, and worsened (Beck, 1976). According to Beck, depressed individuals are negatively biased in their perception of reality. They develop negative, depressive cognitions surrounding themselves, their experiences, and the future, referred to by Beck as the negative triad (Beck et al., 1979). In other words, depressed individuals think negatively of themselves, interpret their experiences negatively, and predict that things will not go their way in the future. Their thought processes or the way they experience the world is largely dominated by cognitive distortions, or automatic thoughts, which are based in their distorted core beliefs (Beck et al., 1979). Individuals are typically unaware of these automatic thoughts because they are in natural alignment with ingrained cognitive structures and patterns that provide a blueprint for processing information and interpreting experiences meaningfully (Beck et al., 1979). These cognitive structures are called schemas. Distressing events activate schemas that are dysfunctional, which leads to a negative interpretation and deduction of events and experiences. This, in turn, impacts a person's behavioral and emotional responses.

Beck hypothesized that schemas are formed through early experiences, especially childhood experiences in the context of family (Beck et al., 1979). Children who experience PM may develop depressive schemas based on negative interactions with caregivers, and their thoughts are in turn dominated by negative automatic thoughts, which may lead to depression.

Schema theory. Jeffrey Young expanded on Beck's cognitive model and developed a model of early maladaptive schemas (EMSs). EMSs, as defined by Young and Lindemann (1992), are "extremely broad and pervasive themes regarding oneself and one's relationships with others, developed during childhood and elaborated throughout one's life." These dysfunctional and self-defeating schemas serve as the basis upon which later experiences are processed. EMSs result from collective childhood experiences with caregivers, siblings, and peers. They are extremely resistant to change and can produce extreme emotional responses, which can lead to negative consequences for the individual or harm to others. These schemas interfere with interpersonal relations, self-expression, and self-sufficiency (Young & Lindemann, 1992). Young and Lindemann proposed that EMSs can lead to distress on different levels, including psychological distress, strained and dysfunctional interpersonal relationships, and impaired work performance.

There are key differences between EMSs and automatic thoughts. EMSs are thought to be all-encompassing, applying across different life themes such as intimacy and autonomy, rather than being characteristic to particular contexts. EMSs induce a more intense level of affect because the schemas involve core human "needs." These schemas are based in interpersonal experiences and perpetuated through these experiences, so the focus in treatment is not solely on the individual, but rather includes the individual's relationships (Young & Lindemann, 1992).

Young proposed 18 Early Maladaptive Schemas, which are divided into five domains: I. Disconnection and Rejection; II. Impaired Autonomy and Performance; III. Impaired Limits; IV. Other-Directedness; V. Overvigilance and Inhibition (Young, Klosko, & Weishaar, 2003). The first domain, Disconnection and Rejection, especially applies to the themes of this paper. Examples of schemas in this domain are as follows. The Emotional Deprivation schema is

characterized by "the expectation that one's desire for emotional connection will not be adequately fulfilled," either through deprivation of nurturance, empathy, or protection. The Defectiveness/Shame schema is characterized by "feeling that one is flawed, bad, inferior, or worthless and that one would be unlovable to others if exposed." As a final example, the Social Isolation/Alienation schema involves feeling that one is different or does not fit "into the larger social world outside the family." A person with this schema may not feel that they belong to a group or community (Young et al., 2003).

Impact of Psychological Maltreatment on Cognition

Gibb, Benas, et al. (2007) investigated the relationship between having a history of emotional maltreatment and adults' depressive cognitions. History of emotional maltreatment was measured using the aforementioned LEQ, which assesses recalled caregiver derogation, humiliation, rejection, extortion, and teasing. Using a sample of undergraduate students, they found that childhood emotional maltreatment was significantly related to current negative and positive automatic thoughts, with a significantly stronger relationship between recalled childhood PM and current negative automatic thoughts. In addition, their results supported a meditational model wherein negative and positive automatic thoughts fully mediated the relationship between emotional maltreatment and young adults' depressive symptom levels.

In a study conducted by van Harmelen et al. (2010), individuals were assessed for childhood abuse utilizing the Nemesis trauma interview (De Graaf, Bijl, ten Have, Beekman, & Vollebergh, 2004a, 2004b). Subjects were asked in this interview whether they had experienced emotional abuse, emotional neglect, physical abuse, and/or sexual abuse before the age of 16. Emotional abuse was described in the interview to participants as: "You were cursed; You were unjustly punished; Your brothers and sisters were favored-but no bodily harm was done."

Emotional neglect was defined as: “People at home didn’t listen to you; Your problems were ignored; You felt unable to find any attention or support from the people in your house.” Presence of childhood abuse was defined as endorsement of any of the four forms of abuse more than once (two or more incidents of abuse of any of kind). Participants with a history of childhood abuse participated in an exercise to determine whether they experience automatic self-associations, specifically self-depression and self-anxiety associations. The self-associations were measured using an indirect performance measure, the Implicit Association Test (IAT). The IAT is a reaction time task performed on the computer in which participants sort stimuli according to opposite target concepts (e.g., “me,” “other”) and attribute concepts (e.g., “depressed,” “elated”). Each target is paired with each attribute during different trials. The idea behind the IAT is that subjects will be faster at categorizing when a target and attribute are strongly associated in their minds. For example, depressed individuals will categorize depressive words under the “depressed”/ “me” category faster than they would categorize depressive words under the “depressed”/“other” category during another trial. They found that childhood emotional abuse was found to have the strongest link with automatic and explicit depressive and anxious associations compared to physical and sexual abuse.

Leeson and Nixon (2011) conducted a study investigating the link between PM, thinking styles, and psychopathology using a sample of 50 children ages 6 to 17 years old. The maltreatment group was recruited from child protection and mental health services, as well as community advertising. The control group was recruited from schools in areas matching the socioeconomic status of participants in the maltreatment group. Compared to the control group, children who had been psychologically maltreated reported more symptoms of depression, PTSD, and lower self-esteem, even after controlling for other forms of abuse. Parents of the

abused children reported that their children experienced more internalizing and externalizing problems than did the parents of children in the control group. PM was also related to child-reported negative automatic thoughts and post-trauma cognitions, which in turn were predictive of self-reported depression, self-esteem, and PTSD.

Messman-Moore and Coates (2007) identified specific EMSs as mediators in the relationship between psychological abuse and interpersonal conflict in an adult sample of undergraduate college women. Childhood psychological abuse was measured using the Computer Assisted Maltreatment Inventory (CAMI), a retrospective measure of childhood stressors, including psychological abuse. Five areas of childhood psychological abuse were assessed, including emotional unresponsiveness, demandingness, terrorizing/spurning, isolating, and corrupting. In addition, parenting style was measured by the PBI according to two domains: warmth/care and control/overprotection. Their results indicated that the mistrust/abuse EMS fully mediated the relationship between psychological abuse and adult interpersonal conflict. The abandonment EMS also fully mediated the relationship, and the defectiveness/shame EMS partially mediated the relationship. The results suggested that those who experience psychological abuse as children may develop a set of beliefs that those they interact with are not able to be trusted, may abuse them, may abandon them, and/or will not provide emotional support when it is needed. Psychologically abused individuals may also develop beliefs about themselves being flawed and shameful.

In another study looking at maladaptive schemas as mediators between emotional maltreatment and later distress in adulthood, Wright, Crawford, and Del Castillo (2009) measured college men and women's self-reported experiences of childhood abuse and neglect, early maladaptive schemas, and current psychological distress, specifically internalizing and

dissociative symptoms. Using the previously described LEQ, physical abuse and neglect and sexual abuse were assessed, in addition to emotional abuse and neglect, in order to control for each form of abuse. After controlling for these other forms of maltreatment, childhood emotional abuse and neglect uniquely predicted symptoms of depression and anxiety, and emotional neglect uniquely predicted symptoms of dissociation. Childhood sexual abuse also emerged as a significant predictor of internalizing and dissociative symptoms. The schemas of vulnerability to harm, self-sacrifice, and defectiveness/shame significantly predicted symptoms of anxiety and depression, and when entered into the meditational model, these schemas partially mediated the relationship between emotional abuse and neglect (analyzed separately) and symptoms of anxiety and depression. The vulnerability to harm and defectiveness/shame schemas significantly predicted dissociative symptoms, and through meditational analyses were found to partially mediate the relationship between emotional neglect and dissociation. These findings suggest that experiences of PM as a child may lead to beliefs about the self as defective or shameful, beliefs that one cannot prevent catastrophes or that catastrophes are possible at any time, or a self-sacrificing excessive focus on the needs, desires, and feelings of others.

Rejection Sensitivity

Geraldine Downey and colleagues developed a model to conceptualize the psychological impact of early experiences of rejection in terms of cognitive-affective processing. Their model proposes that maltreated children ultimately feel rejected by their caregivers, and this leads to an acute sensitivity to rejection. They define "rejection sensitivity" as the disposition to "anxiously or angrily expect, readily perceive, and overreact to rejection" (Downey, Khouri, & Feldman, 1997, p. 85). Research on rejection sensitivity has focused on its origins and consequences, including the impact on interpersonal relationships. Following is a description of the theoretical

basis of this model, a description of the conceptual model, and a review of the research relating rejection sensitivity to maltreatment, social anxiety, and aggression.

Theoretical Basis

In developing a model of rejection sensitivity, Downey and colleagues drew upon early theories relating negative childhood experiences to later interpersonal problems (Erickson, 1950; Horney, 1937; Sullivan, 1937; Symonds, 1938, as cited in Downey et al., 1997). These theories are based in the idea that early experiences of rejection impact perceptions of others' intentions, attitudes toward them, and trustworthiness (Downey et al., 1997). The concept of rejection sensitivity also has roots in Bowlby's attachment theory. According to Bowlby's model, inner working models of what to expect from relationships develop based on the consistency of having one's needs met by caregivers in early childhood. When needs are rejected, insecure working models arise, with accompanying anxieties about being accepted. These models of insecure attachment extend to interpersonal difficulties in adolescence and adulthood, impacting the quality of relationships. Analogously, rejection sensitivity begins with parental rejection and results in impaired relationships and functioning, potentially mediating this relationship (Downey et al., 1997; Feldman & Downey, 1994).

Rejection sensitivity, however, also speaks to the cognitive and affective processing of information, which influences interpretation of interpersonal data and behavior. A related social-cognitive mechanism is described by Dodge (1980), who proposed that aggressive children attribute malicious intent to those who behave negatively towards them, thus explaining their aggressive reactions. This hostile attribution, according to Dodge, distinguishes aggressive from non-aggressive children (Crick & Dodge, 1994). In other words, these individuals process social information in a way that is biased towards their expectation of hostility or rejection. An

information processing bias is also proposed in the rejection sensitivity theory in that individuals have a predisposition to interpreting rejection from others when the social response is ambiguous (Downey & Feldman, 1996; Downey et al., 1997; Feldman & Downey, 1994).

Conceptual Model

Integrating attachment theory and social-cognitive theory, the model of rejection sensitivity offers an explanation for "how early rejection experiences shape (a) the expectations, values and concerns, interpretive biases, and self-regulatory strategies that underlie behavior in particular interpersonal contexts, and (b) the dynamic relations among these cognitive-affective variables and interpersonal behavior" (Downey, Feldman, Khuri, & Friedman, 1994; Feldman & Downey, 1994, as cited in Downey et al., 1997, p. 90). According to the model, children become sensitive to rejection when caregivers fail to meet their expressed needs, thereby rejecting them. They grow to expect that they will be rejected when they seek acceptance and support in close relationships and seek to avoid this rejection. Because of the desired avoidance, they perceive situations in which their needs and vulnerabilities are exposed as threatening and potentially damaging, causing a defensive reaction, which manifests itself as experiencing anger or anxiety. Their defensiveness biases these children toward perceiving rejection when the cues are ambiguous, which results in angry or anxious emotional and behavioral responses (Downey et al., 1997).

Relationship between Parental Maltreatment and Rejection Sensitivity

The theoretical model of rejection sensitivity includes parental rejection as the primary antecedent to the development of this disposition. Several studies support the relationship between parental maltreatment and rejection sensitivity. Feldman and Downey (1994) investigated the link between recalled exposure to family violence in childhood and later

rejection sensitivity in young adulthood utilizing a sample of undergraduate college students. They found that rejection sensitivity mediated the relationship between exposure to family violence, both in the form of parent-to-child and parent-to-parent aggression, and security of adult attachment behavior. The results also supported their hypothesis that both avoidant and ambivalent insecure attachment styles in young adulthood would be positively associated with rejection sensitivity. In another study using a sample of college students, Downey and colleagues (1997) discovered a link between emotional neglect and rejection sensitivity. They utilized an index of emotional neglect that was created for the study and inquired about potential neglect from either the subject's mother or father (e.g., "I had little or no contact with my father/mother in recent years; "My parents were more concerned with what I achieved than with what I needed or wanted"). The result was that the level of rejection sensitivity correlated with the number of items endorsed on the emotional neglect measure ($r = .20$). The authors noted, however, that in both of these studies the level of family violence and neglect reported was not high enough to meet the legal definition of maltreatment.

A prospective study was conducted by Downey, Lebolt, and Rincon in 1995 (unpublished data; as cited in Downey et al., 1997) in which the authors investigated the effect of rejecting parenting on whether children angrily expect rejection from peers and teachers over a period of one year. Children in fifth to seventh grade completed the Children's Rejection Sensitivity Questionnaire (CRSQ; Downey, Lebolt, Rincón, & Freitas, 1998), a measure that utilizes 12 scenarios to assess anxious and angry expectations of rejection. Their primary caregivers completed a rating scale assessing hostile or rejecting behavior towards their children. The following year, the participants, now in sixth to eighth grade, again completed the CRSQ, and their responses indicated that a higher level of rejection from parents at Time 1 predicted the

child's reporting of angry expectations of peer and teacher rejection the following year (it is unclear from the chapter reporting these findings whether Time 2 rejection was controlled for in the analysis). These results support the theory that rejection or maltreatment from parents impact children's expectations that others will be rejecting.

A study by Luterek, Harb, Heimberg, and Marx (2004) looked at the relationship between child sexual abuse and rejection sensitivity. They hypothesized that rejection sensitivity serves as a mediator between childhood sexual abuse and depression. In addition, they investigated whether rejection sensitivity plays a role in the suppression of anger or attenuation of emotional expression in victims of sexual abuse. Utilizing a sample of female undergraduate students, the authors found that childhood sexual abuse was related to rejection sensitivity and each of the three outcomes. However, the results of the mediation analyses varied. Rejection sensitivity mediated the relationship between childhood sexual abuse and depression, partially mediated the relationship between sexual abuse and anger suppression, but did not mediate the relationship between sexual abuse and attenuation of emotional expression. This study was the first demonstration of rejection sensitivity as a common characteristic among survivors of childhood sexual abuse. Although rejection sensitivity did not mediate the relationship between sexual abuse and attenuation of emotional expression, rejection sensitivity was significantly related to the latter construct.

The above studies support the theory that childhood maltreatment, including PM, witnessing and experiencing physical abuse, and sexual abuse, predicts rejection sensitivity. The construct of PM has not been investigated in isolation as a precursor to rejection sensitivity. Although aspects of PM have been examined (e.g., emotional neglect, hostile and rejecting parenting), PM has not been tested in relation to rejection sensitivity using a measure that

corresponds with the accepted definition of this form of maltreatment. In order to identify PM as a specific and unique predictor of rejection sensitivity, it must be measured comprehensively, and other forms of abuse must be controlled for. Additional research is needed to address the relationship between these variables.

Relationship between Rejection Sensitivity and Interpersonal Problems, including Social Anxiety and Aggression

Much work has been done in recent years to examine the behavioral outcomes of rejection sensitivity. Two behavioral outcomes implicit in the theory of rejection sensitivity are social anxiety and hostility or aggression towards others. As the theory purports, rejection sensitive individuals have a predisposition to anxiously or angrily expect, perceive, or overreact to rejection. It follows, then, that these individuals may exhibit social anxiety/withdrawal or hostility/aggression when they perceive interpersonal rejection. Several studies have sought to reveal the relationships between rejection sensitivity and these interpersonal problems.

Downey and colleagues (1998) investigated in three different studies how rejection sensitivity impacts children's relationships with parents and peers. Two of the studies will be discussed. They specifically focused on angry expectations of rejection and their impact on social adjustment, as they were primarily interested in aggressive and disruptive behavior. The sample included fifth through seventh graders in an economically disadvantaged inner city community, and 99% of the participants were children of color. Half of the children were exposed to an experimental condition in which they experienced ambiguous rejection: they selected a friend as a partner to participate in an interview, and they were subsequently told that the friend no longer wanted to participate. A control group was given an unambiguous explanation for the same outcome: they were told that the teacher would not allow their friend to

leave the classroom. The authors expected that children high in rejection sensitivity based on the CRSQ would experience more distress (measured by items tapping into anxiety, distrust, depression, and feeling of rejection) in the experimental condition than children low in rejection sensitivity, and children in the control group would not experience heightened distress regardless of their level of rejection sensitivity. The hypotheses were supported by the results. A second study utilized a longitudinal subsample of the original sample whose subjects participated in the research one year later. Children in sixth through eighth grade completed rating forms assessing their aggression, delinquent behavior, and peer victimization, while their teachers completed questionnaires assessing their students' aggression toward peers, social competence, and behavioral evidence of their sensitivity to rejection. These questionnaires were completed at Time 1 and Time 2 (one year after Time 1). The authors found that angry expectations of rejection and an angry reaction to ambiguous rejection at Time 1 predicted an increase by Time 2 in children's self-reports of aggression, delinquent behavior, and victimization. These angry components of rejection sensitivity also predicted an increase over the one year time period in teacher reports of aggression towards peers and interpersonal sensitivity, as well as a decrease in social competence. In addition, according to school records, angry expectations of rejection at Time 1 predicted officially documented conflict with both peers and adults. The results of these studies speak to the outcomes that can result from angry expectations of rejection, including feelings of distress, aggression, antisocial behavior, and victimization.

London, Downey, Bonica, and Paltin (2007) conducted a longitudinal study examining the social functioning of middle school students. They were interested in whether anxious or angry expectations of rejection predicted increases in social anxiety/withdrawal, loneliness, or aggression, and whether anxious expectations of rejection (as opposed to angry expectations)

specifically predicted the type of interpersonal difficulty experienced (i.e., social anxiety/withdrawal). They utilized the CRSQ to measure rejection sensitivity, as well as a children's measure of social anxiety and a measure assessing children's loneliness and social dissatisfaction. The subjects were 150 sixth grade students in a low socioeconomic urban neighborhood. The authors found that anxious expectations of rejection at Time 1 significantly predicted social anxiety and social withdrawal at Time 2. On the other hand, angry expectations of rejection significantly predicted a decrease in social anxiety and did not predict social withdrawal. A measure of aggression was not included in this study, which would have allowed for assessing the relationship between angry expectations of rejection and aggressive behavior.

Marston, Hare, and Allen (2010) examined the impact of rejection sensitivity on adolescent social-emotional development. They recruited a community sample of racially and socioeconomically diverse boys and girls, and they were assessed at ages 16, 17, and 18. The authors were interested in whether rejection sensitivity was stable over a three-year period of late adolescence, whether rejection sensitivity would predict increases in depressive and anxious symptoms over time, and whether this construct would predict decreases in social competence. Subjects completed self-report measures of depression and anxiety at the three time points, as well as the Rejection Sensitivity Questionnaire (RSQ; Downey & Feldman, 1996). To assess social competence, a peer designated by the subject as a close friend completed a modification of the Adolescent Self-Perception Profile, which measured his or her perspective of the subject's social competence from ages 16 to 18. The results indicated that the teens' relative standing in level of rejection sensitivity over time remained the same; however, as a group, rejection sensitivity decreased significantly from age 16 to age 18. In the area of depression, rejection sensitivity at age 16 predicted an increase in depressive symptoms at 17, and rejection sensitivity

at age 17 predicted an increase in depressive symptoms at age 18. Similar results were observed for anxiety, with rejection sensitivity at age 16 predicting a relative increase in anxiety symptoms at ages 17 and 18, and rejection sensitivity at age 17 predicting an increase at age 18. Social competence results also aligned with the authors' hypothesis, as they found that the subjects' rejection sensitivity at age 16 predicted a decrease in social competence at ages 17 and 18, and at age 17 predicted a decrease in social competence at age 18.

To investigate differential effects of anxious and angry expectations of rejection, as well as examine moderating effects of parent-child and peer relationships, McDonald, Bowker, Rubin, Laursen, and Duchene (2010) utilized a sample of 277 ninth-graders. They looked at whether anxious rejection sensitivity predicted social anxiety and depression when angry rejection sensitivity was controlled. The authors also hypothesized that angry rejection sensitivity would be related to these internalizing problems to a lesser extent and would not be independently related to these symptoms. In addition, McDonald and colleagues were interested in the potential moderating effects of support and quality relationships with parents and peers, as well as whether there is an interaction between these two relationships in predicting social anxiety and depression. The subjects completed self-report measures of social support, social anxiety, and depression, as well as the CRSQ. The results revealed that both anxious and angry rejection sensitivity were associated with social anxiety and depressive symptoms, but only anxious rejection sensitivity uniquely predicted these internalizing symptoms. The results also provided evidence for the protective effects of supportive relationships with parents and peers. Anxious rejection sensitivity was only associated with depression for subjects who lacked supportive friendships with peers. Although angry rejection sensitivity was not predictive of depression for adolescents with at least one supportive relationship, there was a significant

relationship between these constructs for subjects who lacked a supportive relationship with either parents or friends. Interestingly, angry rejection sensitivity was negatively related to social anxiety for those with supportive friendships, and social anxiety was positively related to support from parents for subjects who reported low peer support. The authors note that the directionality of the latter finding is unclear. It is possible that adolescents who are socially anxious and lack peer relationships elicit additional support from their parents, rather than parental support increasing symptoms of social anxiety. Similar to London et al. (2007), a measure of aggression or other externalizing problems would have been useful to supplement these findings by assessing their relationship with rejection sensitivity for adolescents with and without parental and peer support, especially when angry expectations of rejection were present.

Several studies have been conducted to investigate the relationship between rejection sensitivity and hostility, anger, and/or aggression in the context of romantic relationships. Ayduk, Downey, Testa, Yen, & Shoda (1999) studied female undergraduate students in assessing the link between rejection sensitivity and reactions to threats of rejection. The authors conducted three different studies, which were discussed in this article. These studies were based on the premise that rejection or perceived rejection elicits a higher degree of hostility or aggression in those who have a high level of rejection sensitivity. The first study focused on the idea that hostile thoughts are automatically primed by thoughts of rejection among women who are high in rejection sensitivity. Priming effects were investigated using a sequential priming-pronunciation task paradigm. In this task, subjects were presented with a word on a computer screen (the priming word), and a second word quickly replaced it (the target word). Subjects were asked to pronounce the target word as quickly as possible. The words were associated with one of four categories: rejection, hostility, disgust, or neutral. The examiners were interested in

whether highly rejection sensitive subjects would pronounce a hostile target word faster than subjects low in rejection sensitivity when the hostile target word was preceded by a rejection prime. They found that this was the case.

In the second study by Ayduk et al. (1999), high and low rejection sensitive female college students were presented with an experimental or control condition. The experimental condition involved ambiguous rejection by a fictional male partner in the experiment. Subjects were told they were exchanging biographical essays with him, and after this exchange, those in the control condition were told that they would not be interacting with the male due to a technical problem, and those in the experimental condition were told that the male partner had chosen to not continue with the experiment and had left. When asked to rate their impressions of the partner's likeability and sociability, the most negative ratings came from highly rejection sensitive women who were ambiguously rejected. In this study, hostility was conceptualized as retaliation in the form of negative evaluations of the male partner.

The third study used a daily diary to assess women's hostility toward their real-life romantic partners. As part of a mood checklist, subjects completed measures assessing feelings of rejection (insecure, alienated, rejected, and lonely). They also were asked to indicate whether they had experienced conflict with their partners on each day. The authors found that although the frequency of conflict was consistent among subjects with low and high rejection sensitivity, highly rejection sensitive women reported greater amounts of relationship conflict after they reported feelings of rejection. More specifically, highly rejection sensitive women reported behaviors such as losing their temper, insulting or swearing at a partner, saying something spiteful, or threatening retaliation in some way. Overall, these three studies demonstrated that women who are highly sensitive to rejection are not generally more susceptible to exhibit

hostility, but rather they are more prone to do so when they perceive that they have been rejected.

Downey, Feldman, and Ayduk (2000) expanded on the studies using female subjects by investigating male aggression toward romantic partners. The authors proposed two maladaptive routes to minimizing rejection that highly rejection sensitive people may utilize. One is withdrawing from or avoiding close and intimate relationships. In this way they seek to protect themselves from rejection. We would expect these individuals to be socially avoidant and perhaps socially anxious. Alternatively, rejection sensitive people may highly invest in intimate relationships in an effort to obtain unconditional love. However, the latter combination would be expected to cause rejection sensitive individuals to be particularly susceptible to perceiving ambiguous or minor cues as rejecting, and consequently overreacting to them. One extreme behavior that may be expected is physical aggression, which is of interest in the current study. Participants in Downey et al.'s (2000) study included 217 male undergraduate students who completed questionnaires such as the RSQ, as well as self-report scales inquiring about investment and involvement in close and romantic relationships, dating violence, and social avoidance and distress. The results indicated that, as expected, participants who were high in rejection sensitivity and also high in romantic investment were more likely to engage in relationship violence. Analogous with their theory about the different maladaptive approaches to managing relationships for rejection sensitive individuals, those who were highly rejection sensitive and reported that they were low in romantic investment also had fewer romantic relationships and close friendships. Lastly, the authors also found that highly rejection sensitive males who were low in romantic investment were more socially avoidant and anxious. These

results speak to the two different paths that, through rejection sensitivity, may lead to social anxiety or aggression, especially in the context of romantic relationships.

Another study published in 2000 by Purdie and Downey centered on hostility and aggression in romantic relationships. This was a longitudinal study of middle school girls, which examined whether, as was found by Ayduk et al. (1999) in female college students, adolescent girls high in rejection sensitivity would be more likely to report hostile behavior during conflict. They also investigated whether highly rejection sensitive individuals, in an effort to prevent rejection from significant others, demonstrate willingness to engage in self or socially-harmful behaviors. Data were collected from 154 girls in grades 6, 7, or 8 and again one year later. The children completed the CRSQ, which assessed anxious and angry expectations of rejection as described previously. This version of the CRSQ also assessed angry reactions to the scenarios (e.g., hitting, defiance) as well as victimized reactions to perceived rejection (e.g., feeling uncomfortable, feeling like something is your fault). Additional questionnaires asked about dating history, conflict and investment in romantic relationships, relationship concerns and insecurities, as well as tactics used to prevent rejection. The results were that girls who either anxiously or angrily expected rejection worried about their partner being interested in someone else or betraying them, and they felt distressed or uneasy when their partner did something that did not include them. These relationship insecurities were found to predict both angry and victimized reactions to ambiguous cues of rejection. In terms of potentially problematic tactics to prevent rejection, girls who reported anxious and angry expectations of rejection were more likely to endorse the statement, "I would do anything to keep my boyfriend with me even if it's things that I know are wrong." However, they were not more likely to endorse that they try to keep their partner from spending time with friends. When the authors assessed rejection

sensitivity's impact on how these subjects approached conflict with their significant others, they found that, although physical fights were infrequent, both anxious and angry expectations of rejection were significantly related to physical fight involvement. Anxious and angry expectations of rejection were also significantly associated with engaging in hostile withdrawal in conflicts (e.g., ignoring partner to make him feel bad). This study supported the hypotheses that girls who are highly rejection sensitive (either anxiously or angrily) are at risk for experiencing relationship difficulties such as insecurity and worry about their partner's commitment, as well as a higher level of verbal and physical hostility during conflict with a partner. This study also points to the acceptability of analyzing rejection sensitivity as a single construct and not differentiating between angry and anxious rejection sensitivity.

Study Rationale

The studies described above detail an extensive foundation for future research investigating the link between PM, rejection sensitivity, social anxiety, and aggression. A review of the literature indicates noteworthy gaps that can be addressed by future research to supplement the work that has been done and facilitate our understanding of the pathways that lead psychologically maltreated children to have interpersonal problems such as social anxiety or aggression.

Thus far, the definition of PM used in the literature has not been consistent from study to study and typically has included only two or three of the six main subtypes of PM (usually spurning and denying emotional responsiveness) described in the APSAC guidelines (Egeland, et al., 2002; Gibb, Benas, et al., 2007; Gibb, Chelminski, et al., 2007; Gross & Keller, 1992; Higgins and McCabe, 2000; Higgins and McCabe, 2003; Leeson & Nixon, 2011; Manly et al., 2001; Messman-Moore and Coates, 2007; van Harmelen et al., 2010; Webb et al., 2007; Wright

et al., 2009). For example, studies cited in this literature review have defined PM as low parental bonding, low parental warmth, high verbal hostility, verbal aggression, and harsh and inconsistent discipline (Finzi-Dottan & Karu, 2006; Kim et al., 2003; Kolko et al., 1996; Loos and Alexander, 1997; Mullen et al., 1996; Solomon and Serres, 1999; Spillane-Grieco, 2000; Vissing et al., 1991). Incomplete definitions of PM go hand in hand with incomplete measurement of this construct. Various assessments have been used, such as measures assessing parenting practices, subscales of maltreatment measures, and measures of parental discipline or affection. To add to the literature, future research should incorporate a definition and measurement of maltreatment that is comprehensive and corresponds with the accepted definition as outlined in the APSAC to ensure that this form of abuse is being fully accounted for when conclusions are made about the outcomes and consequences, such as the internalizing and externalizing problems investigated in this study.

The research on rejection sensitivity indicates that this pattern of thinking originates in damaging interactions and abusive or neglectful childhood experiences (Downey et al., 1997). Studies conducted thus far have tapped into components of PM (e.g., exposure to family violence, emotional neglect, hostile and rejecting parenting), suggesting that a relationship between these constructs may exist (Downey et al., 1997; Feldman & Downey, 1994). By comprehensively assessing PM in relation to this construct, controlling for other forms of abuse, and potentially identifying a pathway by which rejection sensitivity develops, this study will contribute to the rejection sensitivity research.

The current study initially sought to address an additional gap in the rejection sensitivity literature. Only a few studies have analyzed anxious and angry rejection sensitivity separately to determine whether these constructs impact specific outcomes uniquely (Downey et al., 1998;

London et al., 2007; McDonald et al., 2010; Purdy & Downey, 2000). None of these studies investigated differential outcomes of anxious and angry rejection sensitivity to determine whether these distinct affective responses lead to specific outcomes. Although this study originally set out to investigate these forms of rejection sensitivity independently, the data from this sample indicated that these constructs were highly correlated and best understood as a single rejection sensitivity construct.

To contribute further to the research on both PM and rejection sensitivity, the current study will assess the relationship between these variables, which the literature supports but has not yet explicitly investigated. Research has examined different forms of abuse when assessing outcomes such as negatively skewed cognitive processing or internalizing and externalizing problems. Although the theory and research on rejection sensitivity indicate that maltreatment is a precursor to its development, PM has not been isolated as a specific form of abuse that is strongly related to this construct while controlling for other forms of abuse. As PM is purportedly the most common form of abuse, and because of the emotional nature of the abuse, it may be that this form of maltreatment is most strongly related to rejection sensitivity.

The literature strongly supports the relationship between PM and social anxiety or social withdrawal (Gibb et al., 2007; Kuo et al., 2011; Lochner et al., 2010; Shaffer et al., 2009; Simon et al., 2009), although there is a need for additional studies utilizing child and adolescent samples, as well as longitudinal studies. The rejection sensitivity literature also supports a relationship between this construct and social anxiety (London et al., 2007; McDonald et al., 2010), which follows logically from the theory of anxious rejection sensitivity. A person who anxiously expects rejection from others can be expected to be more anxious in social situations, as this may be a manifestation of their anticipation of and nervousness about being rejected.

Rejection sensitivity (or anxious rejection sensitivity) has not yet been investigated as a mediator between PM and social anxiety, as will be done in the current study.

The research is also supportive of the relationship between PM and aggression (Kolko et al., 1996; Loos & Alexander, 1997; Shaffer et al., 2009; Spillane-Grieco, 2000; Vissing et al., 1991). There is a need for longitudinal studies investigating the development of aggression over time in children who are psychologically maltreated. Like social anxiety, the rejection sensitivity literature supports a relationship with hostility and aggression (Ayduk et al., 1999; Downey et al., 1998; Downey et al., 2000; Purdie & Downey, 2000). Studies such as London et al., 2007 and McDonald et al., 2010, which measured social anxiety and withdrawal as outcomes of anxious and angry rejection sensitivity, can be supplemented with studies incorporating measures of aggression. The nature of angry rejection sensitivity suggests that aggression, a manifestation of anger, would be a logical observed outcome. As of yet, rejection sensitivity (or angry rejection sensitivity) has not been investigated as a mediator between PM and aggression, which this study will do.

In order to isolate PM and assess its effects above and beyond other forms of abuse, physical abuse and sexual abuse will be controlled for in this study. An exploratory hypothesis will also be investigated that involves physical abuse. It is hypothesized that physical abuse distinguishes those psychologically maltreated children who become socially anxious from those who become aggressive. The literature that has investigated various forms of abuse while controlling for the others is mixed in terms of support for physical abuse influencing aggression above and beyond PM, with some studies not supporting a unique relationship between physical abuse and aggression while controlling for PM (Kolko et al., 1996; Leeson & Nixon, 2011; Shaffer et al., 2009; Vissing et al., 1991), and other studies supporting this unique relationship

(Loos & Alexander, 1997). However, there are studies that support a unique relationship between physical abuse and conduct problems or externalizing problems, which often include physical aggression in their definitions (Egeland et al., 2002; Kolko et al., 1996; Manly et al., 2001). Given this data it is worthwhile to further investigate the relationship between PM and aggression.

The current study will offer several contributions to the literature. First, using a comprehensive measure of PM it will assess previously demonstrated relationships between PM and social anxiety and PM and aggression. Second, this study will measure for the first time, using the standard definition of PM and a corresponding measure, the relationship between PM and rejection sensitivity. Third, this study will assess and confirm previously demonstrated relationships between rejection sensitivity and social anxiety and aggression. Fourth, this study will examine whether physical abuse acts as a moderator between PM and aggression by distinguishing between those psychologically maltreated youth who become aggressive and those who become socially anxious. Lastly, this study will test two new mediation models involving the four main constructs of interest. Rejection sensitivity will be tested as a mediator between PM and social anxiety, and rejection sensitivity will also be tested as a mediator between PM and aggression. These mediation models have not yet been investigated and will contribute to the literature by providing models to conceptualize and treat social anxiety and aggression, as well as inform interventions targeting those who have experienced psychological maltreatment.

Hypotheses

Hypothesis 1

Rejection sensitivity will mediate the relationship between PM and social anxiety, controlling for physical and sexual abuse.

Rationale for hypothesis 1. Social anxiety/withdrawal has been identified in the literature as one of the outcomes of PM above and beyond the impact of physical or sexual abuse. Models of social anxiety suggest biological and social learning components as factors in the development of social anxiety (Heimberg, Brozovich, & Rapee, 2010; Rapee & Heimberg, 1997). Childhood trauma has been proposed as a potential social learning factor, including emotional abuse and neglect and parental rejection (e.g., Lieb et al., 2000). However, there is a lack of data supporting the mechanism by which this occurs. Although studies have found that adult patients with social anxiety disorder retrospectively report a higher level of emotional abuse and/or neglect (Gibb et al., 2007; Lochner et al., 2010; Kuo et al., 2011), more data are needed to support the relationship between emotional maltreatment and social anxiety in children and adolescents.

The theory of rejection sensitivity suggests that early experiences with loved ones, including caregivers, which communicate rejection, may lead children to develop expectations of rejection, which may manifest as a defensive reaction of anxiety or anger (Downey et al., 1995; Downey et al., 1997; Feldman & Downey, 1994). Children who are psychologically maltreated by their parents to a great extent receive messages of rejection through actions and words that communicate that they are worthless, unloved, or flawed, receive messages of rejection (Brassard et al., 1991). These children are thus more susceptible to becoming anxiously rejection sensitive than children who are psychologically maltreated to a lesser extent.

As rejection sensitivity theory explains, children who anxiously and/or angrily expect rejection from others are worried or concerned that they will be rejected by others. They interpret ambiguous social cues given by others as rejecting, and they seek to avoid this feeling of rejection. Therefore, they may either avoid social interactions or become distressed when they encounter social interactions (Downey et al., 2000; Feldman & Downey, 1994).

Several studies have demonstrated that different forms of maltreatment predict rejection sensitivity and that rejection sensitivity leads to outcomes such as social anxiety. Studies have not isolated psychological maltreatment as a form of abuse preceding rejection sensitivity or isolated rejection sensitivity as a mediator between maltreatment and social anxiety. This study aims to understand the influence of rejection sensitivity on the relationship between PM and social anxiety symptoms to improve prevention and intervention efforts for children who have been psychologically maltreated and may be predisposed to developing problems in the areas of rejection sensitivity and social anxiety.

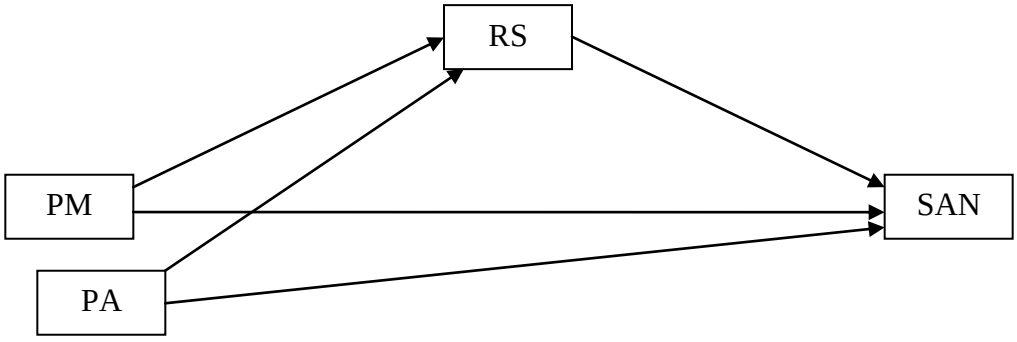


Figure 1. Conceptual diagram for Hypothesis 1. Diagram of the mediation model demonstrating the relationship between psychological maltreatment (PM) and social anxiety (SAN), mediated through rejection sensitivity (RS), with one covariate: physical abuse (PA).

Hypothesis 2

Rejection sensitivity mediates the relationship between PM and aggression, controlling for physical and sexual abuse.

Rationale for hypothesis 2. Studies have suggested that children's exposure to different forms of aggression, including verbal aggression, may impact the level of aggression they direct towards others (Kolko et al., 1996; Vissing et al., 1991). More specifically, there is evidence that emotional abuse and/or neglect lead to aggression in childhood (Loos & Alexander, 1997; Shaffer et al., 2009; Spillane-Grieco, 2000). PM as a comprehensive construct has yet to be studied in relation to childhood aggression; however, it is predicted based on the supporting literature that there will be a significant relationship.

As stated above, the theory of rejection sensitivity suggests that rejecting experiences with caregivers may lead children to develop expectations of rejection, which may manifest as anxious or angry defensive reactions (Downey et al., 1995; Downey et al., 1997; Feldman & Downey, 1994). Therefore, children who are psychologically maltreated by their parents to a great extent are expected to be more susceptible to becoming rejection sensitive than children who are psychologically maltreated to a lesser extent.

The theory of rejection sensitivity indicates that one of the defensive reactions to rejection sensitivity is in the form of anger (Downey et al., 1995; Downey et al., 1997; Feldman & Downey, 1994). As a behavioral manifestation of anger, aggression is expected to be more prevalent in those who are highly sensitive to rejection, compared to those who are not.

Several studies have demonstrated that different forms of maltreatment predict rejection sensitivity and that rejection sensitivity leads to outcomes such as aggression. Studies have not isolated psychological maltreatment as a form of abuse preceding rejection sensitivity or isolated rejection sensitivity as a mediator between maltreatment and aggression. This study aims to understand the influence of rejection sensitivity on the relationship between PM and aggressive behavior to improve prevention and intervention efforts for children who are psychological

maltreated and have a susceptibility to developing rejection sensitivity and leading to behavior problems such as aggression.

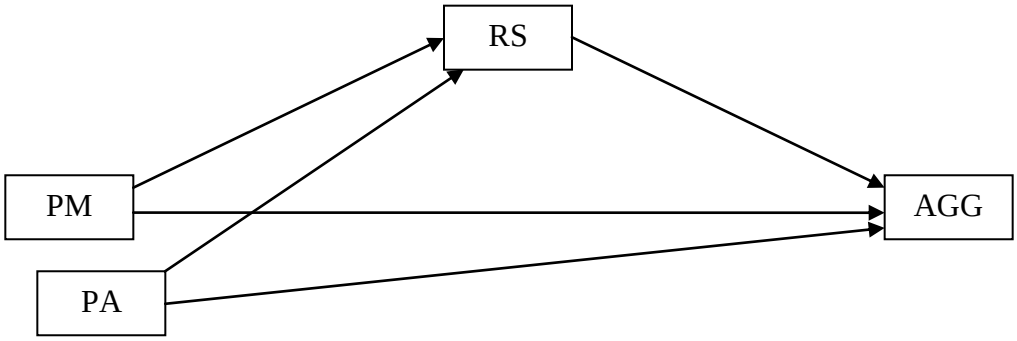


Figure 2. Conceptual diagram for Hypothesis 2. Diagram of the mediation model demonstrating the relationship between psychological maltreatment (PM) and aggression (AGG), mediated through rejection sensitivity (RS), with one covariate: physical abuse (PA).

Hypothesis 3

Of subjects who report greater levels of PM, those who report greater levels of physical abuse will report significantly higher levels of aggression than subjects who report lower levels of physical abuse, when controlling for sexual abuse. Phrased differently, physical abuse will moderate the relationship between PM and aggression, when controlling for sexual abuse.

Rationale for hypothesis 3. The literature suggests that physical aggression is impacted by not only PM, but also physical abuse. Some studies demonstrate a unique contribution of PM above and beyond physical abuse, and others point to the presence of physical abuse as a more powerful predictor of aggression. This study will examine the interaction between these different forms of abuse in relation to aggression.

Hypothesis 4

Of subjects who report greater levels of PM, those who report lower levels of physical abuse will have significantly higher levels of social anxiety symptoms than subjects who report lower levels of physical abuse, when controlling for sexual abuse. Or, physical abuse will moderate the relationship between PM and social anxiety, when controlling for sexual abuse.

Rationale for hypothesis 4. The literature suggests that social anxiety is impacted by PM, but does not point to the unique impact of physical abuse on this variable. Consequently, it is predicted that subjects who are psychologically maltreated, but not physically abused, will demonstrate significant symptoms of social anxiety as opposed to aggression.

Hypothesis 5

Students rated as socially incompetent by the guidance counselor will be significantly more likely to report high PM, physical abuse, rejection sensitivity, social anxiety, and aggression than those rated as socially competent.

Rationale for hypothesis 5. In addition to self-reported measures of social anxiety and aggression (indicators of social competence), this study utilized a method to obtain ratings from the ninth grade guidance counselor, who reported having knowledge of each student's social capability. In order to keep the procedure brief and capture aspects of both social anxiety and aggression in a single rating, the counselor was asked to rate students as either "socially competent" or "not socially competent," with accompanying definitions of each. As the relationships in the above hypotheses between PM, rejection sensitivity, social anxiety, and aggression are expected to be significant, students rated as socially incompetent are expected to report higher levels of these variables, as well as higher levels of physical abuse.

Plan for Analysis

Although Baron and Kenny's (1986) method of mediation analysis (to be referred to as the causal steps approach or method) has historically been utilized to test mediation, recent arguments, along with more current approaches to mediation analysis, have been proposed, which highlight some of the problems with the traditional approach of assessing mediation (e.g., Kraemer, Kiernan, Essex & Kupfer, 2008; Hayes, 2013). One such approach, which was chosen as the method of data analysis for the current study, is conditional process analysis (also referred to as process analysis; Hayes, 2013), a method of analysis based in regression.

Baron and Kenny's method of analysis has been widely used as a straightforward approach to mediation whose steps appear to follow logically and correspond with the mediation model being tested. The causal steps method first requires evidence of an association between the independent variable (X) and dependent variable (Y). If this criterion is met, the mediator (M) is regressed on X to assess the relationship between these variables. Third, M must demonstrate an effect on Y, controlling for X. If this third step is successful, the direct effect of X on Y (the effect of X on Y, controlling for M) is compared with the total effect of X on Y (first analysis). If the direct effect is not significant (and the total effect was), complete mediation is supported. If the direct effect is statistically significant, but the effect has been reduced, partial mediation is supported. Although this standard approach has been popularly used, there are many arguments in the literature against this method of analysis, particularly against the claim that X and Y must have a demonstrated relationship in order for mediation to be present (Hayes, 2009; Shrout & Bolger, 2002; Zhou, Lynch, & Chen, 2010). In his 2013 book, *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*,

Hayes explains four primary arguments against the causal steps approach and for the use of conditional process analysis.

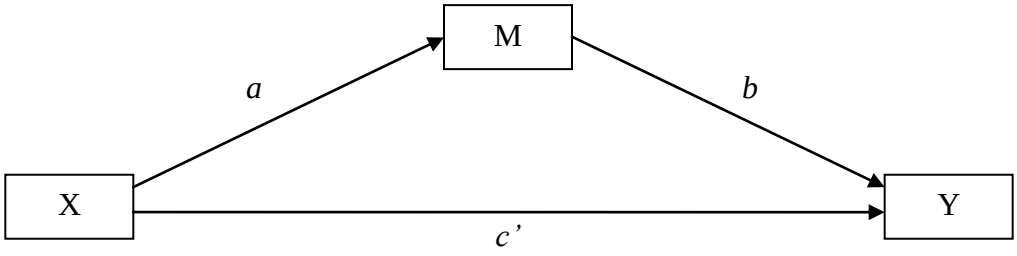
The first is that although the causal steps approach is intended to evaluate the indirect effect of X on Y, it does not quantify the indirect effect nor provide an inferential test to assess it. Using the causal steps method, the presence of an indirect effect is logically inferred via the results of a set of hypothesis tests, but it is not quantified or assessed directly. Conditional process analysis includes a calculation of the indirect effect. Thus, an inference can be made about the indirect effect itself. Furthermore, it is possible to find that the relationship between X and M is not significant, nor is the relationship between M and Y, while the indirect effect is. This would be lost in the causal steps approach.

A second argument is that the causal steps approach requires a number of hypothesis tests to be conducted in order for mediation to be supported, which leaves open a greater number of opportunities for a decision error. The more null hypotheses that need to be rejected, the more likely it is that an error will take place. "Because it relies on so many hypothesis tests, the causal approach is one of the least powerful approaches to testing mediation" (Hayes 2013). On the other hand, a single inferential test of the indirect effect is utilized in conditional process analysis, and this is the only test that is needed to assess mediation.

Third, the first step in the causal approach tests whether X predicts Y (X's total effect on Y). The idea is that there needs to be an effect of X on Y in order for a mediated effect to be present; however, this does not account for the fact that it is possible for X to affect Y *indirectly* through M. This is possible even if one cannot establish through hypothesis testing that the total effect is significant. Although this at first seems counterintuitive, we must remember that X may affect Y through multiple pathways, many of which are indirect effects. The total effect of X on

Y is the sum of the direct and indirect effects. Indirect effects may be in the positive or negative direction, and when summed, the effect may be near zero (by summing positive and negative), even though there are multiple effects at work. If indirect effects account for most of the relationship between X and Y, the total effect may very well be close to zero. Alternatively, a total effect may be close to zero if there are subsamples within the study sample in which differential effects are observed (e.g., X positively affects Y for boys and negatively affects Y for girls; a diluted effect if there is a high number of boys, and X is unrelated in boys and positively related in girls). Hayes refers the reader to Hayes (2009), Mackinnon (2008), and Rucker, Preacher, Tormala, & Petty (2011) for additional discussion and examples regarding this.

The final argument is that investigators are left to only think about mediation and the indirect effect(s) qualitatively, as there is no method to quantitatively assess this relationship. This prohibits one from asking and answering more in-depth questions about the mediation effects, such as quantifying and comparing indirect effects of two different mediators.



a, b, c’ = unstandardized regression coefficients; X = independent variable, M = mediator, Y = dependent variable; *ab* = indirect effect, *c’* = direct effect

Figure 3. Statistical diagram of a simple mediation model.

Conditional process analysis allows for mediation to be examined through a single analysis in which all variables are entered at once, which yields the results of the regressed relationships depicted in Figure 3, plus direct, indirect, and total effects, with significance levels for the direct and total effects. For the indirect effect, bias-corrected bootstrapping is used to

determine a confidence interval for *ab*. Through bootstrapping, a resampling procedure, "an empirically derived representation of the sampling distribution of the indirect effect" is generated (Hayes, 2013). The result is a confidence interval that supports the conclusion that there is evidence of an indirect effect if the interval is entirely above or below zero.

Process analysis yields only unstandardized coefficients and excludes standardized coefficients. Hayes argues that standardized regression coefficients should not be reported, as standardized effects are scaled according to sample variability. Therefore, standardized effects are not actually comparable across studies, even if identical measures are used (the primary argument for using standardized effects is that they are purported to be the most comparable across studies, including those using different measurement methods). Keeping results in unstandardized metrics allows for the results to be directly related to the study's measurement scales and compared across studies using the same measures.

Because of the strong arguments against Baron and Kenny's method and the opportunity to directly assess the indirect effect, conditional process analysis was determined to be an appropriate approach for mediation analysis in the current study. As process analysis can also be used to test for moderation, this method was chosen to analyze the exploratory hypotheses as well.

CHAPTER II: METHOD

Participants

Participants of this study included adolescent males enrolled in an all-male Catholic high school in a low-income neighborhood of Bronx, NY. The School Psychology program of Teachers College, Columbia University had a longstanding relationship with this school, which provided an opportunity to collect data, including information on sensitive subjects such as

abuse. Without a positive and established relationship with a school, it is often difficult to convince the administration to allow such information to be gathered from their students. Thus, this relationship allowed for collection of the data of interest in this study.

The entire ninth grade, consisting of approximately 175 male students, was invited to participate in the study. Parents of 16 students signed passive consent in advance and chose to not permit their children to participate (9%); 136 students participated (78%); 6 students gave consent and then opted out of the study (3%); 17 students either refused consent before looking at the measure or were absent (10%). After cases were excluded based on exclusion criteria detailed below (14 subjects who did not complete one of the five measures in its entirety, 4 participants who endorsed sexual abuse, and one outlier), 117 participants' data were included in the analysis.

Demographic information for this sample is reported in Table 1. The majority of students were 13 and 14 years of age (85.4%). Students older than 14 are believed to have been retained, as the school does not provide special education services. A large proportion of students were of Latino/Hispanic descent (73.5%; proportion similar to the entire school population). Most participants lived with both parents (41.9%) or their mother only (41.9%), and most of the students' parents were married (41.9%) or divorced (20.5%).

Table 1

Distribution of demographic variables

Age	Frequency	Percent	Ethnicity	Frequency	Percent
14	81	69.2	Latino/Hispanic	86	73.5
13	19	16.2	Black/African-American	13	11.1
15	12	10.3	Multiracial	9	7.7
16	2	1.7	White	6	5.1
17	1	0.9	Asian	1	0.9
			Middle Eastern	1	0.9
			None of the Above	1	0.9

Resides With	Frequency	Percentage	Parents' Marital Status	Frequency	Percentage
Both parents	49	41.9	Married	49	41.9
Mother only	49	41.9	Divorced	24	20.5
Mother and Stepfather	6	5.1	Separated	21	17.9
Grandmother/Grandfather	5	4.3	Never Married	18	15.4
Sometimes mother/ Sometimes father	3	2.6	Widowed	2	1.7
Only father	2	1.7			
Father and Stepmother	1	0.9			
Mother and her Friend	1	0.9			

Procedure

Data collection took place at a Catholic high school in Bronx, New York. Parental consent was waived according to the Code of Federal Regulation (Section 46.408, Subpart C), "if the IRB determines that a research protocol is designed for conditions or for a subject population for which parental or guardian permission is not a reasonable requirement to protect the subjects (for example, neglected or abused children)" (Public Welfare Protection of Human Subjects, 2005). As such, the Teachers College, Columbia University Institutional Review Board (IRB) waived the need for parental consent. Nevertheless, the institution in which data were collected requested that parents be informed about the project being conducted. To ensure that parents/guardians were well-informed, passive consent letters were sent to all parents/guardians two weeks prior to data collection describing the project, indicating that data

would be collected anonymously and that results would only be presented in aggregate form, and requesting notification from parents/guardians who did not want their adolescent to participate.

Data collection occurred during the morning assembly period of one school day in the six homeroom classrooms for ninth graders. Each participant completed the questionnaire in his homeroom classroom and was given a time allotment of 90 minutes. Students filled out the questionnaires by hand. Those students who opted out of the questionnaire were instructed to complete homework or read quietly at their desks.

A trained research assistant from the School Psychology Program at Teachers College, Columbia University was assigned to each group of students completing the survey and was responsible for welcoming the participants, reading the assent script, distributing the participant's rights form, distributing and collecting assent forms, distributing and collecting the questionnaires, answering questions, and returning completed questionnaires to a member of the research team. Homeroom teachers remained in the classroom to assist in maintaining order. They were asked to stay at the front of the room to ensure anonymity of questionnaire responses. Research assistants were instructed to answer questions by summarizing or re-reading the relevant portion of their script; they were not permitted to provide additional instructions. Four licensed psychologists were on-site during data collection to support students distressed by questionnaire content. Guidance counselors were also present at the school and were available to speak with participants if necessary. Students were encouraged to speak with a research assistant, the psychologist on-site, or any of the guidance counselors if they were upset by something in the questionnaire or if they wanted to speak with someone about their past experiences. No student asked to speak with someone about his past experiences and no student was observed by the research team or teachers to be distressed by taking the questionnaire.

During data collection, the ninth grade guidance counselor used a seating chart provided by the research team to rate participants as 'socially competent' or not 'socially competent.' The guidance counselor was chosen to complete these ratings because he reported being familiar with each of the ninth grade students' personalities, school performance, and behaviors both in and out of the classroom. Definitions of each of these ratings were provided on the seating chart. Socially competent students were defined as those "generally able to maintain positive relationships and get along with peers." Socially incompetent students were defined as those who have "difficulty maintaining positive relationships and getting along with peers (e.g., gets in fights/arguments frequently, is withdrawn, or has trouble making friends)." To complete the rating, the guidance counselor entered each of the six classrooms in-turn during data collection. He was handed a seating chart prepared by the research assistant at the beginning of class, showing where all of the students present were sitting. The chart was void of any names to preserve anonymity. In addition, the research assistants preparing the charts did not know the names of any of the students. An 'X' was marked in the positions of participants rated as 'socially incompetent.' When one of these participants turned in his questionnaire, the research assistant unobtrusively marked an 'X' on the protocol before putting it into the covered box containing completed questionnaires, to indicate that the guidance counselor considered that student socially incompetent.

Participants' inclusion in this sample was based on active assent procedures. Participants were instructed that they had the option to cease participation in the study at any time during the project. The data collected in this study did not contain any subject names, addresses, titles or other identifying information. Subjects' identities remained unknown to the investigators at all

times. Participants were informed of the anonymity of their responses and completed the questionnaire individually.

Students who participated in the study (as indicated by their signed assent form) were entered into a drawing for one iPad. The drawing took place immediately after data collection, and the winner was announced in the morning of the next school day, per the wish of the school.

Measures

Psychological Maltreatment

Psychological maltreatment was assessed using The Comprehensive Assessment of Psychological Maltreatment – Child Version (CAPM-CV), a 34 item youth self-report of caregiver psychological maltreatment. Written on a fifth grade reading level, it asks youth ages 11 to 18 about their experience of psychologically maltreating behavior by each parent separately. The CAPM-CV items include positive and negative behaviors such as "helps me when I need help" and "makes plans that involve me without asking my opinion," so that a full range of parenting behavior can be sampled. Each statement is rated on a 4-point Likert scale (1=never; 2=sometimes; 3=often; 4=almost always) regarding the frequency with which each parent/caregiver engaged in the given behavior in the last year.

Construct validity is based on a broad theoretical framework of PM developed through 30 years of research (e.g., Brassard et al., 1987; Hart & Brassard, 1987) and on the empirically developed definitions of PM (Brassard et al., 1993; Hart & Brassard, 1991) which were incorporated into the APSAC Guidelines (APSAC, 1995) and many other definitions of PM. Content validity is based on the fact that items were constructed (a) to correspond to the six subtypes of PM put forth in the APSAC guidelines (APSAC, 1995) and expanded in Rivelis (2008) and Brassard & Donovan (2006) with an extensive review of all definitions, all extant

measures, and all research on the effects/relationships between PM and negative child developmental outcomes; (b) a thorough review of 66 child maltreatment measures from 1982-2003 obtained from an exhaustive search of databases and the authors' extensive archive; (c) extensive pilot testing and revision to ensure clarity/understandability of items and instructions for children and youth of differing intellectual abilities and ethnicities living in the United States ages 11 to 18 as well as acceptability of the items to examinees and initial scale reliability and validity; and (d) a review by nine international experts in PM. A recent review of the literature by the authors confirmed that the CAPM-CV is the only existing comprehensive self-report measure of current PM for children and youth.

Construct validity was also assessed by conducting two clinical trials with the CAPM-CV using a clinical and a community sample to ascertain reliability and the degree to which it assessed a unified construct of PM using Item Response Theory (IRT, see Embretson & Reise, 2000 for a detailed review of this method). All items have a discrimination score above one for mothers and for fathers in both clinical and community samples. All six subtypes of PM are well represented including seven items of spurning, nine of terrorizing, seven of exploiting and corrupting, five of denying emotional responsiveness, four of isolating, and two of mental health, medical and educational neglect. In addition to a latent score for each item, a standard deviation for each estimated score was also generated. IRT scores have a mean of zero and standard deviation of one. The advantage of IRT scoring is that it weights each item by the item discrimination parameter so that the more discriminative items – those that best assess the underlying latent construct of PM – are given more weight.

A criterion-based definition of PM on the CAPM-CV was created by referencing each item on the scale to (a) the Modified Maltreatment Classification System (English and

LONGSCAN Investigators, 1997) definitions of emotional mistreatment, a well validated and reliable measure of coding child protective service records; (b) the U.S. National Incidence Study – III (Sedlak & Broadhurst, 1996) definitions of emotional abuse and neglect used to collect periodic incidence data on child maltreatment known to mandated reporters in a sample of counties representative of the U.S. population; and (c) reviews of all extant studies on definitions, measures, and outcomes (see Binggeli et al., 2001; Brassard & Donovan, 2006; Hart et al., 1998; Hart, Brassard, Binggeli, & Davidson, 2002) in order to determine at what level each item would be considered PM (Brassard et al., 2011) . To do this, the four authors and two doctoral students independently decided at what level (never, sometimes, often, almost always) each item should be considered PM and then met and discussed each item until consensus or a clear majority agreed on a level. For these 34 most effective items, IRT item level data were used to empirically sharpen decisions about the level at which an item on a given parental behavior establishes maltreatment. Thus, each item is dichotomized into PM or no PM depending on the level at which such parental behavior crosses a threshold from poor parenting into PM. For example, "is impatient or angry when I question something he/she says" must be rated "always" to be considered PM, but "cannot take care of me because he/she is drunk and/or using drugs" is considered PM if rated "sometimes," "often," or "almost always."

Results of the validation study using the community sample showed that the validation scores (a sum of the number of items coded as PM using the dichotomized scoring for each item) were highly skewed, as would be expected, while the IRT scores were normally distributed. Cronbach's alpha for the PM scales of the mother and father were .92 and .91, respectively. Correlations of validation and IRT scores show a high and significant level of association, above .75, $p < .001$. Correlations between mother and father PM scores were about .50 for validation

and .71 for IRT scores, $p < .001$. Scatter plot comparing the validation and IRT scores showed that there is a quadratic (nonlinear) relationship between the two measures. Based on the distribution of scores, validation scores of 0, 1 and 2, and above 3 were classified as "Low Risk," "Medium Risk," and "High Risk," respectively. Each category represented about one-third of the sample. IRT scores above 1 may be classified as "High Risk," based on comparison with validation scores. IRT scores can be dichotomized to reflect respondents with "High Risk" if their IRT scores are above 1.

In the current study, the validation method was used to create total PM scores and scores for mother PM and father PM. This method was chosen over the IRT method because of its ease of scoring and interpretation. Each of the 34 items on the scale was scored dichotomously as to whether the response met the criteria for PM or not. The final mother and father PM scores represent the total number of items that met the criteria for PM, and these scores were combined to create the total PM scores. Internal consistency for this sample was .88.

Rejection Sensitivity

The Children's Rejection Sensitivity Questionnaire (CRSQ; Downey, Lebolt, Rincón, and Freitas, 1998) was used to examine rejection sensitivity. This measure assesses anxious and angry expectations of rejection and has been used to assess children and adolescents up to ninth grade in several studies (McDonald et al., 2010; Purdie & Downey, 2000; Wang, McDonald, Rubin, & Laursen, 2012) and up to ages 16 and 17 in others (Sijtsema, Shoulberg & Murray-Close, 2011; Silvers et al., 2012). The CRSQ has two subscales (anxious expectations of rejection and angry expectations of rejection). Each item assesses the two subscales and consists of peer and teacher-related vignettes in which there is a possibility for rejection. For example, in one scenario a child has a fight with a friend, but now has a problem that he wants to talk to his

friend about and wonders if his friend will want to speak with him. The subject is asked to rate how nervous he would feel about whether or not the friend will want to talk to him and listen to his problem (anxiety about the possibility of rejection), how mad he would feel about this (anger over possibility of rejection), and then is asked whether or not he thinks his friend will want to speak to him (expected likelihood of rejection). In each vignette, the subject is asked how anxious or angry he would feel in the situation, and what he would expect to happen. Higher scores on each subscale indicate a higher degree of rejection sensitivity stemming from either anxious or angry expectations of rejection. Construct validity was established through factor analysis, which yielded two factors, with all questions assessing anxiety on one factor and all items assessing anger on another (Downey et al., 1998). In addition, the complete sets of items measuring anxious and angry rejection sensitivity, which included both items examining expected likelihood of rejection and those measuring the degree of anxiety or anger about its occurrence, loaded on separate factors for anxious and angry rejection sensitivity. Validity was further established by significant correlations with measures of hostile attribution, perceived social competence, and perceived behavioral competence, all assessed through self-report (Downey et al., 1998). Downey et al. (1998) found CRSQ subscale scores to be consistent over a 4 week interval ($r = .82$ for anxious expectations of rejection; $r = .85$ for angry expectations of rejection) in a sample of fifth through seventh graders. Cronbach's alphas for the subscales are reported as .79 for anxious expectations of rejection and .82 for angry expectations of rejection, indicating good and excellent internal consistencies. Cronbach's alpha for the anxious subscale in this study was .80 and for the angry subscale was .77.

Principal component analysis of rejection sensitivity measure. Due to the strong correlation between anxious and angry rejection sensitivity found in the current study ($r = .74$), a

principal component analysis was run to determine whether analyzing this variable as a single factor could be justified. The scree plot supported the use of a single factor model (see Figure 4). As Table 2 indicates, the component analysis yielded 8 factors with eigenvalues above one; with the first component accounting for 28.2% of the variance and the remaining components accounting for significantly less. Although Carmines and Zeller (1979) indicated that at least 40% of the variability should be attributed to the single component when unidimensionality is present, Reckase (1979) proposed that 20% is acceptable to suggest a single factor solution. There is not strong evidence to suggest that either of these criterion is more suitable than the other. In addition, a parallel analysis was conducted in order to determine which components accounted for more variance than did components derived from a distribution of random data. Eigenvalues from this rejection sensitivity principal component analysis were compared with the 95th percentile of first component eigenvalues in the random data set. Only the first factor produced an eigenvalue (6.78) greater than the criterion value from the parallel analysis (1.94), the condition for retention of the component. This is further support for the decision to combine rejection sensitivity scores and conduct the analyses using a single rejection sensitivity variable as opposed to separate anxious and angry rejection sensitivity variables. Cronbach's alpha for total rejection sensitivity (anxious and angry rejection sensitivity combined) was .86.

Table 2

Principal component analysis of the Children's Rejection Sensitivity Questionnaire

Factors	Initial Eigenvalues	% of Variance
1	6.78	28.23
2	1.98	8.24
3	1.63	6.79
4	1.34	5.60
5	1.27	5.30
6	1.20	4.98
7	1.14	4.75
8	1. 05	4.37

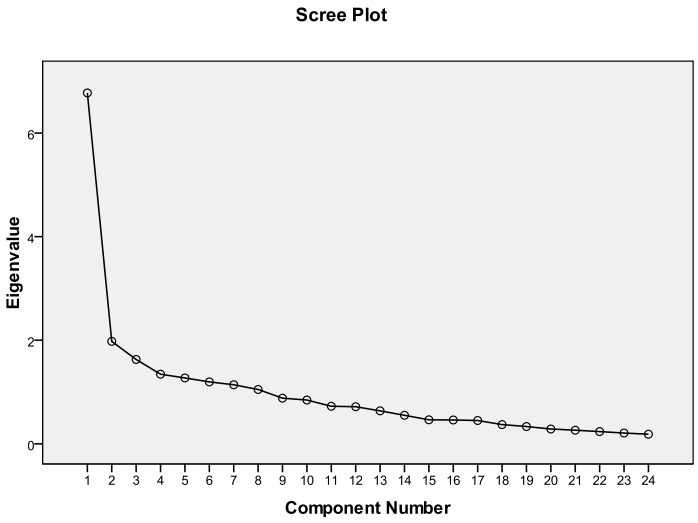


Figure 4. Scree plot for principal component analysis of the Children's Rejection Sensitivity Questionnaire.

Social Anxiety

Social Anxiety was measured with the Social Anxiety Scale for Adolescents (SAS-A; La Greca & Lopez, 1998). The SAS-A assesses three different components of subjective experiences of social anxiety: fear of negative evaluation (FNE), social avoidance and distress specific to new situations or unfamiliar peers (SAD-New), and avoidance and distress generally experienced in social situations with peers (SAD-General). These three components were based on a three factor model of social anxiety, which was developed based on a two factor adult model, comprised of FNE and social avoidance and distress (SAD). Although the same components were present in children, La Greca and colleagues found that the SAD factor was further discriminated into two separate components: avoidance and distress particular to novel situations or peers, and general avoidance and distress when among peers (La Greca & Stone, 1993). La Greca and Lopez (1998) originally tested the SAS-A on a sample of high school students in grades 10 through 12. This study confirmed correspondence with the three factor

model of social anxiety utilized in the development of the measure. Internal consistencies were as follows: .91 for FNE, .83 for SAD-New, and .76 for SAD-General, indicating internal consistencies ranging from good to excellent. A 2000 study conducted by Inderbitzen-Nolan and Walters utilizing a larger sample of children in grades 6-11 also confirmed the three factor model and high internal consistencies (.89 for FNE, .80 for SAD-New, and .70 for SAD-General). Internal consistency for the complete scale in this sample was .89.

Aggression

The aggressive behavior scale of the Youth Self Report (YSR) was utilized to assess aggression. The YSR, part of the Achenbach System of Empirically Based Assessments (ASEBA), is a self-report measure that assesses internalizing and externalizing behaviors over a 6-month period. According to studies reported in the test manual, the Aggressive Behaviors scale's test-retest reliability is .88, and Cronbach's alpha is reported as .86, indicating strong reliability. Content validity of the YSR is supported by evidence that all items discriminate significantly between referred and non-referred children (Achenbach & Rescorla, 2001). Cronbach's alpha in the current study was .80.

Physical Abuse

Physical abuse was assessed using The Minor Assault (Corporal Punishment) scale of the Conflict Tactics Scale Parent-Child (CTSPC; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998). Physical abuse was controlled for in the analyses. The Minor Assault scale assesses the frequency with which the child has been spanked, hit on the bottom with an object, slapped, pinched, or shaken in the last year. Although the minor assault scale of the CTS was utilized (as opposed to the subscales measuring more severe physical assault) in order to maintain the school's comfort with the content of the questionnaire, there is confidence that this scale captures

some or all of the parents in this sample who utilize more extreme forms of physical punishment, as parents who engage in more severe acts more than likely engage in acts of minor assault as well, though the reverse is not always true (parents who engage in minor assault do not necessarily engage in more severe acts; see Straus, 1999). Participants rated the frequency with which their mother and/or father engaged in a given behavior on an 8-point Likert scale. Participant responses were summed to create an overall physical abuse composite, with higher scores indicating more frequent physical maltreatment. Internal consistency for the overall physical assault scales is reported to be .55 (Straus et al., 1998). Numerous studies have found adequate validity for the Conflict Tactics Scale. Concurrent validity is evident by the agreement found between reports of physical abuse by different members of the same family, such as parent and child reports (Straus & Hamby, 1997). Additionally, many investigators have found evidence for construct validity through findings consistent with empirical evidence of the impact of physical abuse on internalizing (Campbell, Kuh, Belknap, & Templin, 1997) and externalizing behaviors (Miller, Downs, & Gondoli, 1989; Vissing et al., 1991) as well as relationships between scores on the Conflict Tactics Scale and the Child Abuse Potential Inventory (Caliso & Milner, 1992). Internal consistency for the total scale in the current sample (mother and father scores combined) was .77.

Sexual Abuse

A single item from the Conflict Tactics Scale Parent-Child (CTSPC) was included in the measure, which asks, "Were you personally ever touched in a sexual way by an adult or older child, when you did not want to be touched that way, or were you ever forced to touch an adult or older child in a sexual way – including anyone who was a member of your family, or anyone outside your family." Participants were asked to respond to one of three options: *No, it did not*

happen; Yes, it happened just once; or Yes, it happened more than once. This variable was scored as sexual abuse (happened one or more times) or no sexual abuse. Those who did not respond to the sexual abuse item were not more likely to report PM and physical abuse than those who reported no sexual abuse. Subjects who omitted the sexual abuse item were excluded from the analysis (6 participants), in addition to subjects who endorsed sexual abuse.

CHAPTER III: RESULTS

Preliminary Data Analysis

Exclusion Criteria

Eighteen participants were excluded from the questionnaire based on exclusion criteria. The first criterion was failure to complete at least one entire scale: PM (CAPM-CV), Physical Abuse (CTSPC), Sexual Abuse (CTSPC), Rejection Sensitivity (CRSQ), Social Anxiety (SAS-A), or Aggression (YSR). For data in which mother and father were reported on separately (i.e., PM and physical abuse), subjects' data were included if at least one parent was reported on. In addition to excluding those who did not complete the sexual abuse item, subjects who reported experiencing sexual abuse were excluded in order to control for sexual abuse.

Missing Data Procedure

Missing values were imputed for each scale in which participants responded to at least 80% of the measure. In these cases, the mean of each participant's own responses within each scale was imputed to replace the scale's missing values.

Testing the Assumptions

The reduced dataset was evaluated to determine whether each continuous variable (PM, physical abuse, rejection sensitivity, social anxiety, aggression) was normally distributed. Skewness and kurtosis values of zero indicate a normal distribution, and the closer a skewness or

kurtosis value is to zero, the more normally distributed the variable is. Klein (1998) recommends that skew greater than 3.0 and kurtosis greater than 10 be considered extreme, with the variable in question considered for transformation. In reviewing skew and kurtosis, all variables were acceptable in the degree of skew and kurtosis: PM (skewness= 1.31, kurtosis= 1.85); physical abuse (skewness = 1.95, kurtosis= 4.13); anxious rejection sensitivity (skewness = .84, kurtosis =. 38), angry rejection sensitivity (skewness = .63, kurtosis= .01), rejection sensitivity (skewness = .71, kurtosis = .08), social anxiety (skewness = .47, kurtosis = .22), aggression (skewness = .77, kurtosis = -.04).

The dataset was also evaluated for univariate outliers. The variables were standardized using z-scores, and observations were identified as outliers if $z \leq -3.29$ or $z \geq 3.29$, the statistic recommended by Tabachnick and Fidell (2001). One participant met this criterion due to his aggression score ($z = 3.47$). This participant was eliminated from analysis to prevent biasing the mean and inflating the standard deviation of this variable.

Lastly, curvilinearity was assessed by graphing the PM variable against the proposed mediator (rejection sensitivity) and dependent variables (social anxiety and aggression) measured in this study. The graphs did not indicate any curvilinear relationships.

Demographic variables

Independent samples t-tests were conducted to examine demographic variables and their relationship with the key variables in the study: PM, rejection sensitivity, physical abuse, social anxiety, and aggression. Living situation was dichotomized into 'living with both parents' versus 'other living situation;' Age was dichotomized into 13 and 14 versus older than 14 (15, 16, 17); Ethnicity was dichotomized into Hispanic versus Other. On each of these dichotomized demographic variables, independent samples t-tests were performed and participants were not

found to differ significantly in their reports of PM, rejection sensitivity, social anxiety, or aggression. The sample's reports of physical abuse did not differ based on ethnicity, but physical abuse reports differed significantly based on living situation and age (younger age group and those living with both parents reported higher levels of physical abuse). Participants differed significantly in sexual abuse reports based on ethnicity, but not age or living situation (higher reporting of sexual abuse for Hispanics).

Descriptive Statistics

For individuals who completed items for their mother and father (PM measure, physical abuse measure), both sets of responses were used to compute scales. If individuals did not report on one of their parents, scales were computed for the parent who was reported on. The mean, standard deviation, and minimum and maximum values for each of the scales are presented in Table 3.

According to the criteria established by the authors of the CAPM-CV, scores of 3 and above are considered "High Risk" for psychological maltreatment. This sample's total scores ranged from 0 to 23 (M = 5.56, SD = 4.80). According to the scoring criteria of the measure, 68.4% of this sample was in the High Risk range for psychological maltreatment.

To create the PM variable, PM mother ratings for each item and PM father ratings for each item were transformed into dichotomous variables of PM or no PM depending on the level at which parental behavior crosses a threshold from poor parenting into PM. The dichotomous ratings were summed separately for mother and father, and then mother and father scores were summed to create a PM combined score. If only mother or father were rated, total PM consisted of only that parent's score. The internal consistency of the PM total scale for this study was high (Cronbach's alpha= .88). PM mother and PM father scores were significantly correlated (r = .46,

$p < .01$). The most common form of PM by mother and father endorsed in this sample was "respects my privacy," with 41.9% of subjects endorsing this item above the threshold for PM, indicating that their mothers or fathers never or sometimes respect their privacy. The second most frequently endorsed PM item for mothers was "takes me/allows me to speak to a professional (like a priest, doctor, or counselor) if I talk about hurting myself or others or when I have other problems that need attention" (41.0%). This points to a high proportion of mothers either never or sometimes seeking help for their sons when needed, particularly when there are mental health concerns. For ratings of fathers, the second most frequently reported PM behavior was "comforts me when I am upset," which 35.9% participants endorsed at the level of PM, indicating that their fathers never or sometimes comfort them when upset.

Physical abuse scores ranged from 0 to 27 (M= 4.58, SD= 5.16), with 12.0% of the sample reporting physical punishment occurring (by mother or father) either prior to the past year or once in the past year, and 70.9% reporting physical punishment twice or more in the past year. The correlation between mother and father scores was strong ($r = .55$, $p < .01$). Cronbach's alpha for physical abuse by mother was .54 and for physical abuse by father was .79. Scores for mother and father were summed to create a total physical abuse score. Internal consistency of the total scale for physical abuse was adequate (Cronbach's alpha= .77).

Rejection sensitivity scores were computed according to the procedure outlined by the authors, which incorporates both the expectation of likelihood of rejection and the degree of anxiety or anger over the possibility of its occurrence (Downey et al., 1998). Anxious rejection sensitivity scores ranged from 1.42 to 20.42 (M = 8.09, SD = 3.91), angry rejection sensitivity scores ranged from 1.67 to 19.08 (M = 8.40, SD = 3.61), and total rejection sensitivity scores ranged from 3.33 to 38.14 (M = 16.49, SD = 7.02). These statistics correspond with those of the

sample upon which psychometric data for the CRSQ is based (Downey et al., 1998): anxious rejection sensitivity scores: 1.45-21.58, M = 8.16, SD = 3.91; angry rejection sensitivity scores: 1.50-29.00, M = 8.34, SD = 4.26. Possible scores obtained on each subscale of this measure range from 1 to 36, with a median score of 11. The distribution of scores in this sample indicates moderate levels of anxious rejection sensitivity, with 24.8% of the sample at or above the median of possible scores, and moderate levels of angry rejection sensitivity, with 23.9% of the sample above the median of possible scores. The internal consistency of the complete rejection sensitivity measure for this sample was very good (Cronbach's alpha= .86).

Social anxiety ratings for each participant were summed to create a total score. According to the measure's authors, scores above 50 indicate a clinically significant level of social anxiety (LaGreca & Lopez, 1998). High levels of social anxiety were reported in 22.2% of the sample. Scores ranged from 19 to 82 (M = 42.43, SD = 13.41). Internal consistency of this scale was high (Cronbach's alpha= .89).

A total score for aggression was calculated by summing self-report ratings of aggression. These scores ranged from 0 to 20 (M= 6.86, SD= 4.71). Total scores were converted to T-scores in order to determine the level of participants who reported aggression in the clinical range (7.7% in the borderline clinical range; 6.0% in the clinical range). The internal consistency of the aggression measure was strong (Cronbach's alpha= .80).

Sexual abuse was controlled for in this study by excluding subjects who endorsed a history of this abuse or did not respond to this item. As described above, sexual abuse was assessed using a single item. Although 93% of the total respondents reported never experiencing sexual abuse, 2 participants reported being sexually abused twice, and 2 subjects reported being sexually abused on more than one occasion. Six participants did not respond to this item.

Correlations of Primary Variables

Correlations of the primary variables are outlined in Table 3. Anxious and angry rejection sensitivity were highly correlated. In addition, anxious rejection sensitivity, angry rejection sensitivity, and total rejection sensitivity were each significantly correlated with social anxiety and aggression. Social anxiety and each form of rejection sensitivity were moderately correlated, while aggression and each form of rejection sensitivity yielded low correlations. Relationships between PM and physical abuse and between PM and aggression were low and significant. Social anxiety was not significantly correlated with PM, and physical abuse did not correlate significantly with any of the rejection sensitivity variables or social anxiety. Aggression was significantly correlated with all variables, aside from social anxiety. No issues of multicollinearity were identified as the bivariate correlation coefficients between PM, physical abuse, and all forms of rejection sensitivity were low enough to justify the simultaneous inclusion of these predictors in a regression equation assessing mediation.

Table 3

Descriptive statistics and correlations of primary variables

	Mean	SD	Min.-Max.	1	2	3	4	5	6
1. Psychological Maltreatment	5.56	4.80	0.00-23.00	--					
2. Physical Abuse	4.58	5.16	0.00-27.00	.25**	--				
3. Anxious Rejection Sensitivity	8.09	3.91	1.42-20.42	.15	-.02	--			
4. Angry Rejection Sensitivity	8.40	3.61	1.67-19.08	.15	-.002	.74**	--		
5. Rejection Sensitivity	16.49	7.02	3.33-38.14	.16	-.01	.94**	.93**	--	
6. Social Anxiety	42.43	13.41	19.00-82.00	.11	.02	.60**	.54**	.61**	--
7. Aggression	6.86	4.71	0.00-20.00	.31**	.22*	.21*	.28**	.26**	.18

*Correlation is significant at the 0.05 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed)
Instruments: 1. CAPM-CV; 2. CTSPC-Minor Physical Assault; 3., 4., & 5. CRSQ; 6. SAS-A; 7. YSR-Aggression

Analyses of Hypotheses

Hypothesis 1

Rejection sensitivity will mediate the relationship between PM and social anxiety, controlling for physical and sexual abuse.

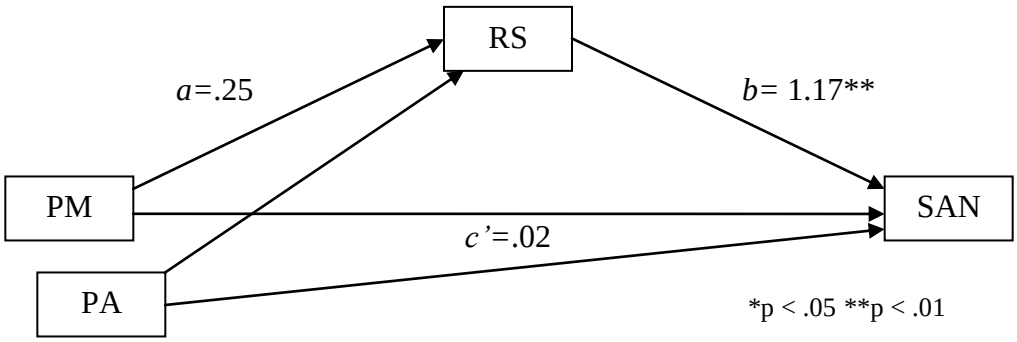


Figure 5. Statistical diagram for Hypothesis 1. Statistical diagram of the mediation model with unstandardized regression coefficients demonstrating the relationship between psychological maltreatment (PM) and social anxiety (SAN), mediated through rejection sensitivity (RS), with one covariate: physical abuse (PA).

Mediation analysis conducted using conditional process analysis demonstrated that PM indirectly influenced social anxiety through its effect on rejection sensitivity. As demonstrated in Figure 5 (also see Table 4), participants who reported higher levels of psychological maltreatment reported higher levels of rejection sensitivity than those who reported lower levels of psychological maltreatment, but not to a significant degree (a = .25, p = .072). Participants who reported higher levels of rejection sensitivity reported a higher number and/or intensity of social anxiety symptoms (b = 1.17, p < .001). A bias-corrected bootstrap confidence interval for the indirect effect (ab = .30) was above zero (.004 to .730). There was no evidence that psychological maltreatment influenced social anxiety independent of its effect on rejection sensitivity (c' = .02, p = .917). Although the direct relationship between psychological maltreatment and social anxiety was not significant, the process method demonstrated that rejection sensitivity may in fact be a route through which psychological maltreatment impacts

social anxiety, and this mediation effect may obscure the direct relationship between these variables. The model explained 37.4% of the variance in social anxiety.

Table 4

Model coefficients for the regression analysis examining the mediation model linking psychological maltreatment with social anxiety through rejection sensitivity

		Outcome						
		M (Rejection Sensitivity)				Y (Social Anxiety)		
Predictor		Coeff.	SE	P		Coeff.	SE	P
X (Psych. Malt.)	*a*	.25	.14	.072	*c'*	.02	.22	.917
M (Rej. Sens.)		---	---	---	*b*	1.17	.14	< .001
C (Ph. Abuse)		-.08	.13	.553		.07	.20	.729
			R^2 = .028				R^2 = .374	
			F(2, 114) = 1.66, p = .194				F(3,113) = 22.51, p < .001	

X = predictor; M = mediator; Y = outcome; C = covariate
Direct effect of psychological maltreatment on social anxiety = .02, p = .917
Indirect effect of psychological maltreatment on social anxiety = .30; 95% confidence interval above zero (.004 to .730)
Total effect of psychological maltreatment on social anxiety = .02 + .30= .32, p = .239

Hypothesis 2

Rejection sensitivity will mediate the relationship between PM and aggression, controlling for physical and sexual abuse.

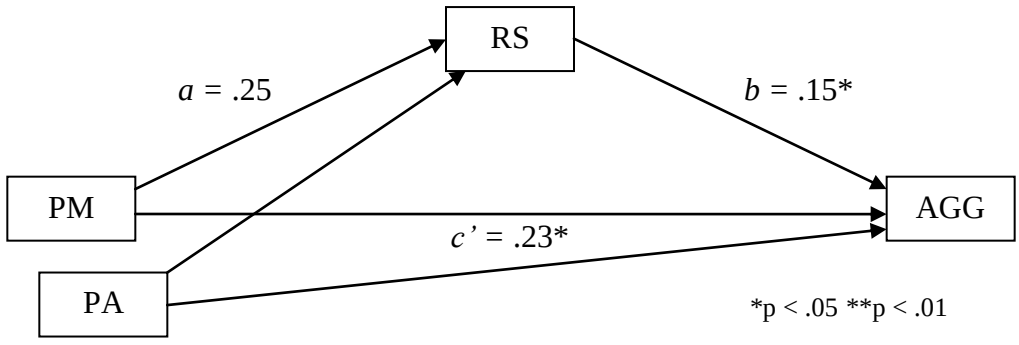


Figure 6. Statistical diagram for Hypothesis 2. Statistical diagram of the mediation model demonstrating the relationship between psychological maltreatment (PM) and aggression (AGG), mediated through rejection sensitivity (RS), with one covariate: physical abuse (PA).

Mediation analysis conducted using conditional process analysis indicated that PM indirectly influenced aggression through its effect on rejection sensitivity. As demonstrated in Figure 6 (also see Table 5), participants who reported higher levels of psychological maltreatment reported higher levels of rejection sensitivity than those who reported lower levels of psychological maltreatment, but not to a significant degree (a = .25, p = .072). Participants who reported higher levels of rejection sensitivity reported a high number and/or intensity of items assessing aggression (b = .15, p = .010). A bias-corrected bootstrap confidence interval for the indirect effect (ab = .04) was above zero (.002 to .131). There was also evidence that psychological maltreatment influenced aggression independent of its effect on rejection sensitivity (c' = .23, p = .011). Although the direct relationship between psychological maltreatment and aggression was significant independent of the impact of rejection sensitivity, the process method demonstrated that rejection sensitivity also may play a role in the relationship between psychological maltreatment and aggression. The model explained 16.7% of the variance in aggression.

Table 5

Model coefficients for the regression analysis examining the mediation model linking psychological maltreatment with aggression through rejection sensitivity

		Outcome						
		M (Rejection Sensitivity)				Y (Aggression)		
Predictor		Coeff.	SE	P		Coeff.	SE	P
X (Psych. Malt.)	a	.25	.14	.072	c'	.23	.09	.011
M (Rej. Sens.)		---	---	---	b	.15	.06	.010
C (Ph. Abuse)		-.08	.13	.553		.15	.08	.069
			R^2 = .028				R^2 = .167	
			F(2, 114) = 1.66, p = .194				F(3,113) = 7.56, p < .001	

X = predictor; M = mediator; Y = outcome; C = covariate
Direct effect of psychological maltreatment on aggression = .23, p = .011
Indirect effect of psychological maltreatment on aggression= .04; 95% confidence interval above zero (.002 to .131)
Total effect of psychological maltreatment on aggression= .23 + .04 = .27, p= .004

Hypothesis 3

Moderation analysis conducted utilizing conditional process analysis demonstrated that the impact of PM on aggression was not moderated by physical abuse, as the interaction term was not significant (p = .193). Table 6 shows the results of this analysis.

Table 6

Results from the regression analysis examining moderation of the effect of psychological maltreatment on aggression by physical abuse

	Coefficient	SE	p
Psychological maltreatment	.11	.13	.406
Physical abuse	.01	.14	.966
Psychological maltreatment x Physical abuse	.02	.02	.193
		R^2 = .180	
		F(4, 112) = 6.14, p < .001	

Hypothesis 4

Moderation analysis conducted via conditional process analysis indicated that the impact of PM on social anxiety was not moderated by physical abuse, as the interaction term was not significant (p = .360). Table 7 displays the results of this analysis.

Table 7

Results from the regression analysis examining moderation of the effect of psychological maltreatment on social anxiety by physical abuse

	Coefficient	SE	p
Psychological maltreatment	-.19	.32	.555
Physical abuse	-.18	.34	.596
Psychological maltreatment x Physical abuse	.03	.04	.360
		R^2 = .379	
		F(4, 112) = 17.07, p < .001	

Hypothesis 5

Independent samples t-tests were performed to compare students rated as socially competent by the ninth grade counselor with students rated as socially incompetent. The variables PM, physical abuse, rejection sensitivity, social anxiety, and aggression were investigated. All t-tests indicated that there was not a significant difference between these two groups in their reporting of these variables. See Table 8 for a comparison of the means and standard deviations of these variables for socially competent versus socially incompetent subjects.

Table 8

Independent samples t-tests: socially competent vs. socially incompetent

	Socially Competent	Socially Incompetent
Psychological Maltreatment	M = 5.45; SD = 4.81	M = 9.67; SD = 2.08
Physical Abuse	M = 4.60; SD = 5.22	M = 4.00; SD = 2.65
Rejection Sensitivity	M = 16.51; SD = 7.06	M = 15.72; SD = 6.32
Social Anxiety	M = 42.52; SD = 13.52	M = 39.00; SD = 8.89
Aggression	M = 6.88; SD = 4.75	M = 6.00; SD = 3.61

CHAPTER IV: DISCUSSION

This study examined two mediation models. Rejection sensitivity was investigated as a mediator between psychological maltreatment (PM) and social anxiety and also between PM and aggression. To assess PM in isolation and without the confounding effects of other forms of maltreatment, physical abuse and sexual abuse were controlled for in the analyses. In addition to testing these models, which have not previously been studied, the relationships between PM and the above variables were assessed for the first time using a comprehensive measure of PM. Utilizing this comprehensive measure ensured that all subtypes of PM were included in the analyses of the relationships and allowed for greater confidence in making conclusions about the relationship between PM and several variables that impact social-emotional functioning.

Participants of this study included 117 males ranging from ages 13 to 17. They completed five measures assessing PM, rejection sensitivity, social anxiety, aggression, physical abuse, and sexual abuse: the Comprehensive Assessment of Psychological Maltreatment-Child Version (Brassard et al., 2011), Children's Rejection Sensitivity Questionnaire (Downey et al., 1998), Social Anxiety Scale for Adolescents (La Greca & Lopez, 1998), the Youth Self Report Form-Aggression Scale (Achenbach, 1991), and Parent-Child Conflict Tactics Scale (Straus et al., 1998). A significant proportion of the sample reported high levels of PM (68.4%) and physical abuse (70.9%); 24.8% and 23.9% of the sample reported anxious and angry rejection sensitivity above the median of possible scores, respectively; 22.2% of the sample reported clinically significant levels of social anxiety; 13.7% of the sample reported borderline or clinically significant levels of aggression; 93% of the sample reported never experiencing sexual abuse, and the remainder either endorsed sexual abuse or did not respond to this item.

The high proportion of participants who reported PM is noteworthy. It is possible that the significant level of PM evidenced in this population is related to socioeconomic status. NIS-4 data indicates that children from low-income families are psychologically abused five times more frequently and psychologically neglected four times more frequently than those in higher income families (Sedlak et al., 2010). Although only 50% of participants reported the range of their family income (low, middle, upper middle, or high), of those who did report a range, 79.4% endorsed low (below $32, 500) or middle ($32, 500-$60,000) family income.

It was hypothesized that rejection sensitivity would mediate the relationship between PM and social anxiety and that rejection sensitivity would mediate the relationship between PM and aggression. To test these mediation models, process analysis was used. The results supported mediation by demonstrating a significant indirect effect for each model.

This study's data extends findings in the literature about the relationships between the constructs of interest. The current study utilized a comprehensive measure of PM (the CAPM-CV), ensuring that PM was accurately measured and that these relationships were able to be investigated more accurately, while controlling for physical and sexual abuse. More specifically, as previous research indicates, PM and aggression were significantly related. This relationship was apparent in this study both through the mediator rejection sensitivity and independently of this indirect effect, which indicates that PM and aggression are related to each other beyond the influence of rejection sensitivity, either through other indirect effects or directly. This study also provided evidentiary support for the relationship between PM and social anxiety, though only an indirect relationship was demonstrated. Theory and evidence on the relationship between rejection sensitivity and different forms of parental maltreatment point to a significant relationship between PM and rejection sensitivity; however, this study only supported this hypothesis through interpretation of the indirect effect, as the relationship between these constructs was not significant. Furthermore, the rejection sensitivity conceptual model, whereby an individual comes to expect or interpret rejection from others and defensively react with anxious or angry rejection sensitivity in interpersonal situations, logically implies anxious and angry reactions as outcomes. There is support in the literature that these reactions manifest as social anxiety or aggression, and this study demonstrated significant relationships between rejection sensitivity and both of these constructs.

This study's findings demonstrate that PM has unique relationships with social anxiety and aggression, as well as rejection sensitivity. As physical and sexual abuse were controlled for, this allows for an interpretation about PM as an isolated construct. Previous studies have not

measured PM comprehensively, nor have they controlled for both physical and sexual abuse, which likely either masked or exaggerated their conclusions about the impact of PM.

The interaction effects investigated in this study were not significant. Physical abuse did not moderate the relationship between PM and social anxiety, nor did it moderate the relationship between PM and aggression. In this sample, low or high levels of physical abuse did not determine whether social anxiety or aggression were present to a significant degree. Although theoretically it appears to make sense that physical abuse and aggression would be related, given that physically abused youth have a parental model of expressing anger aggressively and physically or emotionally harming others when they are agitated, the literature is mixed on whether this relationship has an impact above and beyond PM.

Testing of the final hypothesis indicated that students rated as socially competent versus socially incompetent did not differ in their reporting of PM, physical abuse, sexual abuse, rejection sensitivity, social anxiety, or aggression. However, only 4 subjects were included in the socially incompetent group, as rated by the ninth grade guidance counselor. Thus, conclusions about this data should be made with caution. As data collection occurred soon after the school year began, the guidance counselor may not have had an opportunity to get to know the ninth graders well enough to rate them at the time the study took place. Additionally, the guidance counselor does not tend to spend as much time with the students during the day as their teachers do. In the future it may be beneficial to ask teachers to rate the subjects on social competency.

Although the rejection sensitivity data and psychometric data of the CRSQ indicate that there are two separate rejection sensitivity constructs based on the affective and defensive response to the expectation of rejection, in this sample, rejection sensitivity appeared to not be specific to a particular emotional response. In general, those who reported anxiously expecting

rejection from others also reported angrily expecting rejection from others, which was reflected in the high correlation between the anxious and angry rejection sensitivity data. Furthermore, the principal component analysis supported a unidimensional construct. This pattern of reporting may be unique to this sample of adolescent boys. It is possible that they are unable to distinguish clearly between hypothetical feelings of anxiety or anger, and these feelings may be confused or muddied when they are asked to report on them. In their all-male school environment, they may not be encouraged to express their emotions or develop skills in identifying and managing them (unless they are specifically referred for counseling, for example).

Strengths

This study had several strengths in it goals and design. To start, PM was assessed using a measure that corresponds with its widely agreed-upon definition and has strong construct validity. In addition, other forms of abuse, including physical and sexual abuse, were controlled for, which allowed for the impact of PM to be isolated as a unique predictor of the relationship studied. Third, this study attempted to take into account that young adolescent boys may not accurately self-report, especially when asked about antisocial behaviors, by asking a member of the school staff who works closely with the participants to rate them on their social competence. Lastly, this study utilized a current method of mediation analysis, conditional process analysis, which takes into account the limitations of Baron and Kenny's causal steps approach, including quantifying and elucidating the indirect effect (Hayes, 2013).

Limitations

There were several limitations of this study, which impact the generalizability of its results. First, the data were obtained via self-report, a method which can carry with it both strengths and weaknesses. It is possible that subjects over or under reported their symptoms and

experiences, and their retrospective accounts may not have been precise. In addition, as it is a cross-sectional study, the temporal order of occurrence of the variables PM, rejection sensitivity, and social anxiety or aggression cannot be determined. In order to do so, longitudinal data would have to be collected. However, it can be logically inferred that parents establish the tone of their interactions with their children at an early point in the development of these relationships. Research has suggested that parental verbal and physical aggression may induce or promote aggressive behavior in their children (Kolko et al., 1996), which implies that there may be an opportunity to alter children's aggressive behavior by modifying parenting practices. Likewise, the concepts of rejection sensitivity and social anxiety imply that models of rejection, exclusion, or negative interpersonal interactions (the first of which are caregiver interactions) precede the development of these constructs. In short, although the logical course of development of the variables of interest in this study may be interpreted, causal relationships cannot be established in this study due to the cross-sectional nature. A third limitation of this study relates to the demographics of the sample. The data were obtained from a sample of all male 13 to 17 year old boys, which does not allow for interpretation beyond this gender and developmental level. Finally, based on effect sizes resulting from the analyses, the sample size for this study was not sufficient to achieve adequate (.80) power, according to guidelines outlined by Fritz and MacKinnon (2007).

Clinical Implications

The level of PM that was present in this sample was notably high, with over 68% of the boys who participated reporting significant levels of psychological maltreatment. Approximately 24% of the sample also reported rejection sensitivity above the median of possible scores; 22% reported significant social anxiety, and 14% reported a clinically significant level of aggression.

While temporal sequencing in the development of these interpersonal problems cannot be determined from the data, theory and models of emotional development support an interpretation of the data as experiences of PM leading to rejection sensitivity and to social anxiety and/or aggression. Theory also points to social anxiety and aggression as potential outcomes of rejection sensitivity. Discovering these relationships opens an opportunity for clinical intervention to prevent social anxiety and aggression in youth.

Early clinical intervention for children who have been psychologically maltreated can potentially prevent rejection sensitivity, a pattern of thinking that can prompt the development of anxious or aggressive thoughts, feelings, and behaviors. Therapeutic intervention can aid children in challenging their dysfunctional beliefs about themselves and others, which are developed through experiences of being psychologically maltreated. When it is communicated to children that they are unloved, worthless, or unimportant, this changes their thought patterns and interpretations of interpersonal interactions. Individual or group-based treatment utilizing cognitive-behavioral therapy incorporates cognitive restructuring and the challenging of inaccurate or unhelpful thoughts, which can aid in reformatting the schema through which one is prompted to think about themselves and others. Rejection sensitivity can also be challenged, as children who are rejection sensitive are negatively biased to interpret rejection when it may not be present.

The school is a uniquely beneficial setting in which to intervene for several reasons. Although many parents may not take the initiative to seek treatment for their children or may not be able to afford outside mental health services, children up to at least age 16 are required to attend school and therefore are readily available to receive school-based services and interventions. In addition, school-based interventions can be integrated into the curriculum,

which is both efficient and beneficial to youth in viewing social-emotional skills as valued components of their overall developmental progression, in addition to academic learning. The Penn Resiliency Program (Gillham, Brunwasser, & Ferres, 2008) is a cognitive-behavioral school-based group intervention for adolescents, which teaches youth to identify, assess, and challenge maladaptive beliefs. This program has demonstrated utility in treating both internalizing and externalizing behaviors such as depression, anxiety, and conduct problems (Cutuli, Chaplin, Gillham, Reivich, & Seligman, 2006; Gillham et al., 2006). Fourth R (Wolfe, Crooks, Hughes,& Jaffe, 2001) is a school-based program that targets prevention of violence and promotes healthy relationship-building through activities such as role-playing and peer mentoring. This intervention has evidenced particular success among adolescent males, including less frequent physical violence in romantic relationships and a lower incidence of delinquency for those who had previously completed the program (Crooks, Scott, Ellis, & Wolfe, 2011). Because PM is such a common occurrence and so frequently underreported, it may be beneficial for school psychologists to screen all students for PM in order to identify youth who should be targeted for intervention. Too often students are referred after a serious problem develops, but programs such as these may benefit all students in developing healthy relationships, problem-solving skills, and coping skills.

A more proactive approach that can be used to intervene is parent training. PM is the least obvious form of abuse, and some parents may be unaware of the damage they are causing. Parents bring their own set of childhood experiences, positive or negative, to their relationships with their children, or they may adopt harsh parenting approaches of their own upbringing, as this is the method they know. Awareness and proactive teachings are the first steps to ensuring that more parents are able to make a conscious effort to communicate love, respect, and value

toward their children and prevent internalizing and externalizing problems from developing as a result of PM. Further, once such problems develop, it is most beneficial to focus treatment on both the parent and child to ensure that the root cause is addressed and the cycle does not perpetuate. The Incredible Years Parenting Programs (Webster-Stratton, 1992), appropriate for school-aged children and younger, focus on building a positive, nurturing relationship between parent and child, reducing harsh parenting practices, and train parents in appropriately addressing conduct problems as well as promoting their children's social and emotional development. This includes education about the many forms of PM and its potential consequences. Another evidenced-based treatment for parents that has extensive evidentiary support for its success in both preventing and treating behavioral and emotional difficulties in children and adolescents is Triple P-Positive Parenting Program (Sanders, 2008; see Nowak & Heinrichs, 2008 for a meta-analysis of effectiveness). This program is based on cognitive-behavioral foundations as well as developmental theory and teaches parents how to effectively address behavioral concerns while maintaining positive relationships with their children, including reducing stress and avoiding harsh discipline. A family-based therapeutic approach that may prove effective in treating PM, rejection sensitivity, and its related outcomes is Functional Family Therapy (Sexton & Alexander, 2004). This therapeutic approach was designed for adolescents with externalizing behavior problems and their families. This method approaches conceptualization and treatment from a systemic and relational perspective in that the adolescent problem is not viewed as a problem in and of itself, but rather an extension of a functional family relational pattern that has detrimental consequences. These approaches to training parents and treating the family are proactive approaches to intervening when PM is present and preventing future PM from occurring, while lessening the likelihood of its consequences emerging.

Directions for Future Research

Longitudinal studies investigating PM and its outcomes are needed to address the question of causality and confirm the directional nature of the development of social anxiety and aggression through PM and rejection sensitivity. As adolescent boys were exclusively studied, a study including a sample of adolescent girls would be beneficial to determine whether the results of this study can be extended across genders in this age group or to reveal different relationships among the variables.

Future research on PM and rejection sensitivity should examine different forms of anxiety as potential outcomes. Although social anxiety has been investigated in the literature, anxiety in the context of romantic relationships is another social context in which anxiety can be experienced and should therefore be assessed as well. Future research is also needed to develop intervention strategies specific to rejection sensitivity. Cognitive-behavioral techniques can be useful and effective; however, evidence-based programs such as those previously discussed, especially school-based programs, may also be efficacious in targeting rejection sensitivity, especially in a group context as rejection sensitivity is an interpersonally-based concept.

Interestingly, this study did not support the two factor model of the CRSQ, as was supported in the psychometric data for this measure (Downey et al., 1998). A single factor was determined to be the most logical factor structure for this study, indicating that in this sample, rejection sensitivity is not emotion-specific as it is elsewhere in the literature. This measure should be utilized with a variety of populations (varied socioeconomic status, ages, and genders) to inform the presentation of rejection sensitivity in different populations. In addition, as was an original goal of this study, future studies in which anxious and angry rejection sensitivity

manifest as two separate factors in the CRSQ should examine differential outcomes of these two affective components of rejection sensitivity.

Finally, it is important for future research to utilize a comprehensive measure of PM, such as the CAPM-CV utilized in this study. Previous studies investigating the link between PM and internalizing and externalizing outcomes purported to examine PM, but in fact investigated only limited aspects of it or did not measure it accurately. Future research can further investigate the relationship between PM and the variables of interest in this study by exploring specific subtypes of PM (e.g., spurning, denying emotional responsiveness) and how they may differentially impact rejection sensitivity, social anxiety, and aggression. In addition, for children who report that only one parent engages in PM and the other does not, this non-abusive parental relationship can be examined as a protective factor through moderation models testing the relationship between PM and social anxiety or PM and aggression.

This study examined two mediation models in which rejection sensitivity acts as a mediator between PM and social anxiety or PM and between aggression. The findings supported the hypothesis that rejection sensitivity mediates the relationship between PM and social anxiety as well as the hypothesis that rejection sensitivity mediates the relationship between PM and aggression. This sample included only ninth grade adolescent boys in a Catholic high school, and it is important to replicate the findings in samples more varied in gender, age, socioeconomic status, and ethnicity in order to generalize the results more broadly. Nevertheless, this study offers valuable information about the potentially damaging pathways that can develop through PM and rejection sensitivity, which provides an opportunity to intervene with both children and their parents.

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Appendix

Psychological Maltreatment Forms

A repeated pattern or extreme incident(s) of the conditions described in this list constitute PM. Such conditions convey the message that the child is worthless, flawed, unloved, endangered, or only valuable in meeting someone else's needs.

SPURNING (hostile rejecting/degrading) includes verbal and nonverbal caregiver acts that reject and degrade a child. SPURNING includes:

- belittling, degrading and other nonphysical forms of overtly hostile or rejecting treatment;
- shaming and/or ridiculing the child for showing normal emotions such as affection, grief, or sorrow;
- consistently singling out one child to criticize and punish, to perform most of the household chores, or to receive fewer rewards;
- public humiliation.

EXPLOITING/CORRUPTING includes caregiver acts that encourage the child to develop inappropriate behaviors (self-destructive, antisocial, criminal, deviant, or other maladaptive behaviors) EXPLOITING/CORRUPTING includes:

- modeling, permitting, or encouraging antisocial behavior (e.g., prostitution, performance in pornographic media, initiation of criminal activities, substance abuse, violence to or corruption of others);
- modeling, permitting, or encouraging developmentally inappropriate behavior (e.g., parentification, infantilization, living the parent's unfulfilled dreams);
- encouraging or coercing abandonment of developmentally appropriate autonomy through extreme overinvolvement, intrusiveness, and/or dominance (e.g., allowing little or no opportunity or support for child's views, feelings, and wishes; micromanaging child's life);
- restricting or interfering with cognitive development.

TERRORIZING includes caregiver behavior that threatens or is likely to physically hurt, kill, abandon, or place the child or child's loved ones/objects in recognizably dangerous situations. TERRORIZING includes:

- placing a child in unpredictable or chaotic circumstances;
- placing a child in recognizably dangerous situations;
- setting rigid or unrealistic expectations with threat of loss, harm, or danger if they are not met;

- threatening or perpetrating violence against the child;
- threatening or perpetrating violence against a child's loved ones or objects.

DENYING EMOTIONAL RESPONSIVENESS (ignoring) includes caregiver acts that ignore the child's attempts and needs to interact (failing to express affection, caring, and love for the child) and showing no emotion in interactions with the child. DENYING EMOTIONAL RESPONSIVENESS includes:

- being detached and uninvolved through either incapacity or lack of motivation;
- interacting only when absolutely necessary;
- failing to express affection, caring, and love for the child.

ISOLATING includes caregiver acts that consistently deny the child opportunities to meet needs for interacting/communicating with peers or adults inside or outside the home. ISOLATING includes:

- confining the child or placing unreasonable limitations on the child's freedom of movement within his/her environment and
- placing unreasonable limitations or restrictions on social interactions with peers or adults in the community.

MENTAL HEALTH, MEDICAL, AND EDUCATIONAL NEGLECT includes unwarranted caregiver acts that ignore, refuse to allow, or fail to provide the necessary treatment for the mental health, medical, and educational problems or needs for the child. MENTAL HEALTH, MEDICAL, AND EDUCATIONAL NEGLECT includes:

- ignoring the need for, failing, or refusing to allow or provide treatment for serious emotional/behavioral problems or needs of the child;
- ignoring the need for, failing, or refusing to allow or provide treatment for serious physical health problems or needs of the child;
- ignoring the need for, failing, or refusing or allow or provide treatment for services for serious educational problems or needs of the child.

Source: Hart, S. N., & Brassard, M. R. (1991, 2001). Definition of psychological maltreatment. Indianapolis: Office for the Study of the Psychological Rights of the Child; Indiana University School of Education.